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ABSTRACT

As part of the series of student materials developed by the Environmental Education Project at Florida State University, this volume contains three instructional units dealing with population growth and perception of the environment. Designed for junior high students, each unit contains an extensive introduction to orient a teacher to the major concerns, rationale, objectives, lesson plans, student materials, and evaluation components. Unit 1 includes 16 student activities that require students to examine the variables of population change, problems of population growth, the various stages of population growth, and ethical questions about the need to maintain a balanced relationship between population size and the natural environment. Unit 2 contains 11 activities about how various world cultures perceive the environment. Unit 3 includes 12 student activities in which students reflect on the economic development of the United States and its implication on both the natural and international environmental situation. (Author/DE)

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FINAL REPORT

Project No. R021079

Grant No. OEG-0-72-5145

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THE ETHICS OF ENVIRONMENTAL CONCERN: A RATIONALE AND PROTOTYPE MATERIALS FOR ENVIRONMENTAL EDUCATION WITHIN THE HUMANISTIC TRADITION

Volume IV of Five Volumes

September 30, 1973

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
National Center for Educational Research and Development
Office of Environmental Education

NOTE TO READERS OF THE FINAL REPORT

Three units are included in this volume of our final report. Each unit has an extensive introduction to orient the teacher to the major concerns, rationale, and objectives for the unit. The lesson plans for each activity are printed in yellow. The student handouts are printed in white, for spirit reproduction for student use. Tests are included for many knowledge and inquiry skill objectives. Teachers are directed to make careful observations and to analyze student work (i.e., written papers, creative activities, etc.) to assess attainment in the area of affective objectives.

The reading level in this material has been controlled for middle school students. Most readings are short and to the point. When a reading is more difficult, students may work on this in small groups or with the teachers' assistance. In the field trials the reading level was not a problem affecting student performance. Teachers used the overhead projector, small groups, and class oral reading to assist some students when problems with a specific handout were predicted in advance.

In general the units were very successful, judging from staff observations and teacher logs. The population unit was most widely used by our target audience, teachers and students in Leon and Pinellas Counties, Florida. The Cowboy and Spaceman unit and the environmental perception unit were not used as widely but with equal success. A major weakness reported by teachers was in the test instruments and in additional devices to "get at" affective development. Any school system using these units should give thought to developing more effective evaluation tools.

The slides which are used in the units are not available through ERIC or through the Project office. However, descriptions of the slides are provided and where a slide was taken from a published source, a citation is given. Where the slides were taken locally, the description will permit teachers in other areas to take their own slides.

The three units are entitled:

1. *POPULATION: PEOPLE AND PROBLEMS IN THREE SETTINGS*
2. *SEEING YOUR PLACE: ENVIRONMENTAL PERCEPTION*
3. *THE COWBOY AND THE SPACEMAN: TWO CONTRASTING WAYS OF LIVING IN THE AMERICAN EXPERIENCE*

POPULATION

PEOPLE AND PROBLEMS IN THREE SETTINGS

Prepared by

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In this little booklet the yellow pages are designed for the teacher, offering commentary on the activities, some objectives, and a few directions. The white pages are for students and the teacher may reproduce student copies by using Thermo-fax spirit masters and dittoing copies.

PRIOR TO BEGINNING THE UNIT, THE TEACHER SHOULD:

1. Run off all the white pieces of paper in the unit (one copy for each student).
2. Lesson #2 - Order the movie, The Hunters (Contemporary Films, 1958, 16mm, 72 minutes, color). It may be obtained from F.S.U. Film Library, Tallahassee, Florida 32306.
3. Lesson #3 - Order a slide projector. Make slides from National Geographic, August 1972, pp. 219-249.
4. Lesson #5 - You will need 200 coins or buttons.
5. Make transparencies of handouts for Lessons #3, 6, 9.
6. Lesson #11 - Order the film Boomsville (Learning Corporation of America, 1970, 16mm, 11 minutes, color). It may be obtained from The Media Center, The Florida State University, Tallahassee, Florida 32306.

I. RATIONALE

We are deeply committed to the premise that social studies instruction which loses sight of the present and omits the future has missed the point, for the present and the future are the prime experience of our students. The baffling conditions of the Sixties, now the 1970's, are the most relevant topics for classroom inquiry and the most significant to students. That's where it is. Human history may be focused to provide insights on contemporary problems, which good teachers know will reveal man's perennial dilemmas as he shaped his aspirations and faced adversity. Social science may provide constructs and generalizations useful in guiding analysis and building explanations for these contemporary conditions. The legalists and ethicists may well contribute vital techniques in handling the value conflicts and normative confusion wrought by these conditions. But most important to us, learning to wrestle with today's problems in terms of reliable knowledge, inquiry skills, and the resolution of conflict is a critical preparation for the students' future - a future not within the restricted confines of a classroom, but rather, within the larger community with its conflicts and accomplishments. As John W. Gardner stresses with his conception of "self-renewal,"

> Instead of giving young people the impression that their task is to stand in dreary watch over the ancient values, we should be telling them the grim but bracing truth that it is their task to re-create those values continuously in their own behavior, facing the dilemmas and catastrophies of their own time. Instead of implying that the ideals we cherish are safely embalmed in the memory of old battles and ancestral deeds we should be telling them that each generation refights the crucial battles and either brings new vitality to the ideals or allows them to decay.

For the 1970's there is no more crucial problem confronting the world community, no more searching crisis, than that of how to reduce population pressures and improve the quality of human life. James Reston impressed this upon us when he reported that "The lesson of the Sixties is that the fertility of the human body and mind are what is moving the world and all governments, of whatever ideology, are baffled about how to deal with all this humanity, contention, and pollution." Reflect back to when Christ walked the Earth. The world's population was only about 250,000,000 persons. It took more than sixteen centuries to add another quarter billion to that total. By 1810 there were still only one billion persons on the face of our planet and a century later in 1930, there were about two billion. By 1960, however, another billion had been added. Now it is estimated that by 1975 the sum will be four billion. At this rate the world's population will grow to exceed seven billion persons by the year 2000. Projecting these growth rates further to the year 2220, we can forsee a population of 136 billion, one person per square meter. Dropping from world figures to a single nation, the United Arab Republic (Egypt) offers a startling case. That strip of fertile land along the serpentine Nile supported several millions during the days of Pharaoanic grandeur. By 1947 it was required to support nineteen million. In 1970 it is forced to supply foodstuffs for 33 million, and projections indicate that Egypt will have a population of 60 million by 1988 and 86 million by 2000, if the Four Horsemen of the Apocalypse do not intervene.

During the 1960's, Americans became somewhat more conscious of world population pressures. Curious visitors to the New York World's Fair were given, in just four seconds, a message of despair by a UNIVAC computer programmed with population information. Mammoth advertisements in the Washington Post and New York Times included "By the time you finish reading this ad, 17 people will have died from starvation. Most of them were children." And, "Good Morning, while you were asleep last night 3,336 people died from starvation." Organizations like Planned Parenthood and the Victor Fund sounded the fire bell in the night to arouse Americans and world leaders to the dangers of swelling populations. C.P. Snow, the popular British novelist and scientist, told us that many people in poor nations are "going to starve to death before our eyes... We shall see them doing so upon our television sets." The rich nations will be "surrounded by a sea of famine involving hundreds of millions of human beings."

The issue of population growth and hunger has been part of the casual education of most young people, yet it has been absent in their school studies. Within this small unit is a rational approach to teaching and learning reliable knowledge of demography. In attempting to produce it, we have been constantly aware of the heightened anxiety such study causes. The subject is controversial, as all that Reston and Gardner include are controversial. So it is critical that students are given the chance to encounter a worldly, relevant, tough-minded approach to a social problem they must solve in their younger years.

For those who would prefer to constrain school study to the three R's we have no patience, nor have their sons and daughters. Furthermore the subject of this book is not just the stuff of a Friday current event report. It is a topic for serious academic study, and that is how we will proceed.

In 1962 Frank W. Notestein, then President of The Population Council, urged that men stop talking about a race between population and food supplies. His point was that the real issue was not sheer survival, or the dismal attempt to avert starvation. The real issue was, and is, how to achieve a transition from poverty to a world of "healthy, educated, and productive people able to meet life's hazards." To comprehend the current problem and the hoped for transition is not the stuff of slogans on the TV set alone but one of demographic and economic analysis in the classroom. In this volume we suggest a demographic structure for conceptualizing the current problem,and reveal a set of demographic theories and models to guide student inquiry and to help them build adequate explanations. "Adequate" explanations not only detail conditions and how they came to be, but also offer the basis for prediction to suggest ways to intervene to alter those conditions. Students using this volume should learn a number of concepts and inquiry skills essential to demographic analysis, and they should also learn a set of powerful theoretical models which may guide subsequent thought about population dynamics in any situation. To ask students to achieve less would be to revert to mere slogans and alarms, far below the minimal expectations for an educated citizen of the 1970's and beyond. This also suggests a creative task for the teacher.

But to inquire and to build social science explanations, does not relieve students of their burden. Arnold Toynbee, the English historian, grasped another vital aspect of the current population problem when he wrote: "The issue is, indeed, a religious one in the sense that it raises the question, 'What is the true end of man? Is it to populate the Earth with the maximum number of human beings... or is it to enable human beings to lead the best kind of life that the spiritual limitations of human beings allow?'" Once objective social science inquiry has produced student explanations, with various alternatives and projected consequences set forth, the desirability of these consequences must be assessed. Deciding upon individual action and appropriate public policy is a weighing of consequences with a set of value-preference criteria. It is the justification of these normative and moral criteria which involves Toynbee's philosophic question of ends. Asking a student to think through these questions, asking him to justify his normative and moral criteria for decision-making, is controversial stuff for instructors. But social studies instructors are not running cloisters or supermarkets. For them to fail to ask such questions is to miss the point of such instruction.

It seems to us that attending to Notestein's transition and Toynbee's question is the material to shape our futures as members of a world community. The population problem like other monumental problems will be solved, we believe, but at what cost to human institution and freedom? If citizens as individuals are to affect public policy, church policy, and economic conditions, it's obvious that they must be equipped and concerned. The alternative, resulting from popular ignorance and apathy, seems to be a gradual depressing of individual freedom and democracy.

As noted in the 1972 Final Report of the Commission on Population Growth and the American Future,*

> What matters ultimately is the impact of population growth upon the quality of life; changes in population are merely the means to such a goal. Does this country want to continue to invest its resources simply in meeting more demands for more services, more classrooms, more hospitals, more housing, more roads, more everything ... as the population continues to grow? Or should we concentrate our energies and resources on improving the quality of such services and extending them to those for whom such quality is at best a hope rather than a fact? The population problem is the problem of achieving, consistent with political and ethical standards, a lasting

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*Population and the American Future (Washington,D.C.: U.S. Government Printing Office, 1972).

and constructive balance between numbers of people and an evolving definition of "the good life" in this country and the world.

We end as we began: Our country can no longer afford the uncritical acceptance of the population growth ethic. Given the whole trend of human history to the contrary, that is not an easy lesson to learn. The growth ethic seems to be so imprinted in human consciousness that it takes a deliberate effort of rationality and will to overcome it, but that effort now seems necessary.

II. CONCEPTUAL ORGANIZATION

A. Definition of Population Education

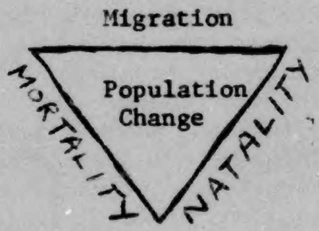
"Population education is defined as the process by which the student investigates and explores the nature and meaning of population processes, population characteristics, the causes of population change and the consequences of these processes, characteristics and change for himself, his family, his society and the world."

B. Variables of Population Change

Social scientists who study population dynamics (called "demographers") have found that the decline or growth of population within an area results from three factors. These factors are:

1. Mortality Rate: The death rate, usually expressed as the number of deaths per one thousand people within a given year,
2. Natality Rate: The birth rate, usually expressed as the number of live births per one thousand people within a given year,
3. Migration: The number of people moving into (immigration) or out of (emigration) the area.

These factors may be called "variables", since the rates of births, deaths, and migration change with social conditions from year to year.



IV-6

C. Problems of Population Growth

> ...The world's population will continue to grow as long as the birth rate exceeds the death rate; it's as simple as that ....Basically there are only two kinds of solutions to the population problem. One is a "birth rate solution" in which we find ways to lower the birth rate. The other is a "death rate solution" in which ways to raise the death rate -- war, famine, pestilence -- find us.
>
> --Paul Ehrlich, The Population Bomb

1. In the long run, an equilibrium must at some point be reached between birth rates and death rates. Man has the responsibility of attaining this equilibrium. If he does not accept this responsibility, however, the "death rate solution" will result.

2. In the short run, and this is the new element in recent years, population growth is threatening the quality of life. Never before have so many people been forced to live so close together. Never before have the airs and waters of the earth been so abused. Everyone in some way or another has experienced some of these short run effects.

D. Stages of Population Growth

1. Traditional Society
    a. High birth rate, high death rate (with fluctuations for good harvest years and poor harvest years, along with cases of drought, epidemic or disease outbreak);

    b. Characterizes the conditions of a mainly agricultural population;

    c. Examples include: Bushmen of Africa; Tasaday Tribe of the Philippines.

2. Transitional Society
    a. High birth rates, but rapidly declining death rates;

    b. Characteristic of countries beginning to develop economically, with rapidly expanding populations;

    c. Vast improvements in agricultural methods, mineral and fuel resources, sanitation and medical services, and transportation;

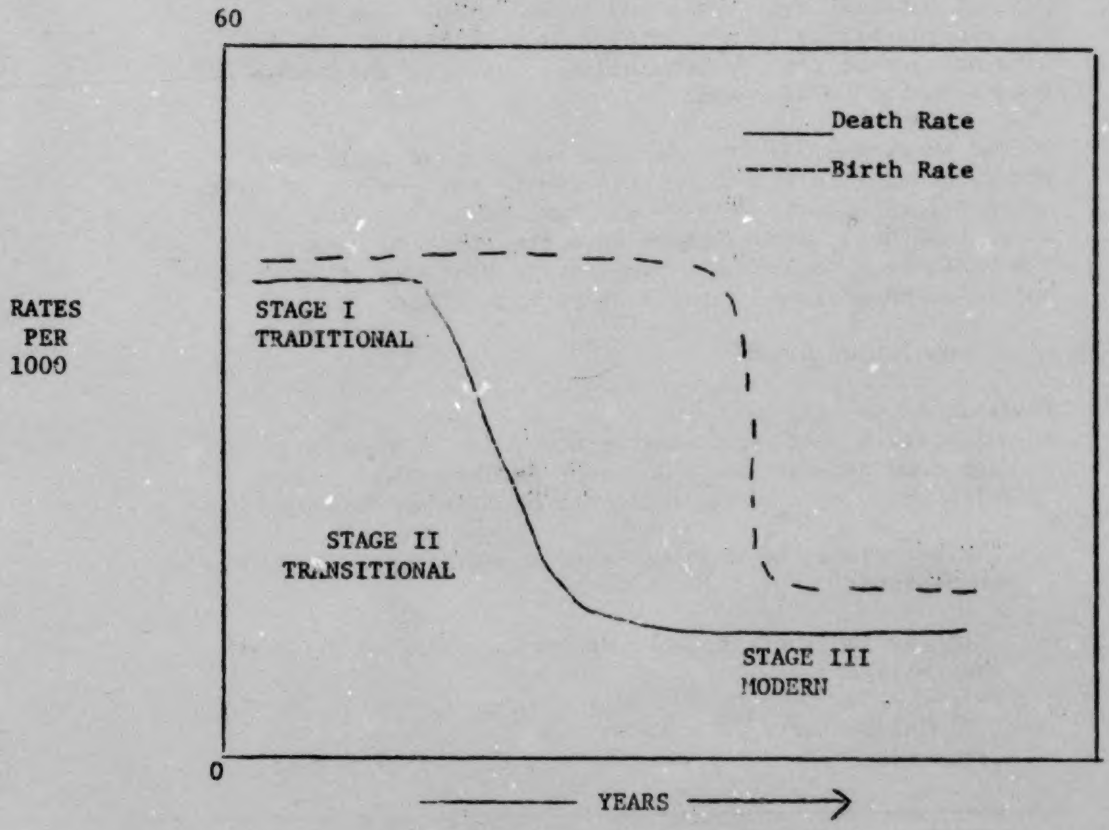
    d. Examples include: India, Ceylon, Mexico, Egypt.

3. Modern Society
    a. Declining or low birth rates and declining or low death rates;

b. Characteristic of countries which have developed economically with gradual expanding populations or little population growth;

c. Examples include: U.S.A., Sweden, Great Britain.

Graphic View of the Stages of Population Growth:



III. **LONG RANGE** OBJECTIVES

A. To promote students' understanding of the impact of population growth and family size on personal, community, national and world development.

B. To provide students with a cognitive and attitudinal background that would help them to make warranted decisions in matters related to family size.

C. To promote students' awareness of the need to maintain a balanced relationship between population size and the natural environment and resources.

D. To develop students' ability to make an analysis of the population situation through the instruction given in basic demographic concepts and processes.

E. To make students aware of many consequences of population change through the instructions concerning the three stages of population growth.

F. To build up students' feelings of personal relevancy and empathy for the subject of population and, for those affected, through role playing, class discussions and ethics cases.

#1 Introduction

Long Range Objective:

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

Short Range Objective:

Given a role playing exercise exemplifying population growth and given class discussion and teacher comment on the exercise, students will list the three means of population change.

Given a role playing exercise exemplifying population growth and given class discussion and teacher comment on the exercise, students will list the four functions of population education.

Given a role playing exercise exemplifying population growth and given class discussion and teacher comment on the exercise, students will write down a definition of Population Problem.

Procedure:

1. The teacher should prepare the classroom prior to the beginning of class by roping off or otherwise encircling a space barely large enough to contain 40 students standing up. When class begins, the teacher explains to students that the class will be beginning a unit on Population Growth, and that all of them will be able to assist in an initial activity. He then hands out large colored cards with

pins to various students asking them to enter the circle when their date is called. The teacher should explain that the circle represents the portion of the earth which is inhabitable by people and that each of them represents certain increases in population historically. Ask students to think about how they feel at each stage of the development, "What factors are affecting your thoughts and feelings?

2. Begin the activity:

   --Ask the student with the card 500 A.D./250 million (1 student) to come into the roped off area

   --Ask the students with the cards 1650 A.D./500 million (2 students) to come into the roped off area

   --Ask the students with the cards 1850 A.D./1 billion (4 students) to come into the roped off area

   --Ask the students with the cards 1930 A.D./2 billion (8 students) to come into the roped off area

   --Ask the students with the cards 1970 A.D./3 1/2 billion (16 students) to come into the roped off area

   --At this point the circle is nearly filled and students may believe things are not too uncomfortable. Then in a loud voice the teacher calls outside to another class of 32 students having cards saying 2001 A.D./6 billion people

3. After the exercise is completed, ask students to express their feelings and thoughts on Population Growth. Students should openly respond to the exercise and begin a class discussion.

4. After students have begun to discuss population growth and the exercise, ask students how they think population changes take place? They can think in terms of their own neighborhood, city, or the world as in the exercise. Either through class consensus or with the help of the teacher, the students will arrive at the following three variables of population change:

   a. Birth
   b. Death
   c. Migration

5. After students have listed the preceeding three variables of population change, ask students why we should study population and what they think we will be most interested in? Either through class consensus or with the help of the teacher, the students will list the following functions of population education:

   a. To find out the number of people in an area
   b. To find out what change (increase or decrease) has taken place in this area
   c. To be able to explain this change
   d. To be able to tell what will happen in the future

6. Ask students to think a minute about the activity, the three variables of population change and the four functions of population education. Ask the students what they think is meant when we say, "population problem"? Either through class consensus or with the help of the teacher the students will arrive at and write down the following definition of Population Problem:

> A country has a population problem if the population size, growth rate, composition or movement slows down or threatens the existence and development of that country, or of any subculture within that country.

7. Teacher will ask students to bring all notes to class each day because they will be needed.

500 A.D.

250 Million People

250,000,000

1650 A.D.

500 Million People

500,000,000

CUT ON LINE CUT ON LINE

1650 A.D.

500 Million People

500,000,000

1850 A.D.
1 Billion People
1,000,000,000

1850 A.D.
1 Billion People
1,000,000,000

CUT ON LINE

1850 A.D.
1 Billion People
1,000,000,000

1850 A.D.
1 Billion People
1,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

CUT ON LINE

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1930 A.D.
2 BILLION PEOPLE
2,000,000,000

1970 A.D. 3 1/2 Billion People 3,500,000,000	1970 A.D. 3 1/2 Billion People 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000
1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000	1970 A.D. 3 1/2 BILLION PEOPLE 3,500,000,000

CUT ON LINE

2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000
2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000	2001 A.D. 6 BILLION PEOPLE 6,000,000,000

#2 Traditional Society

Long Range Objective:

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

Enabling Objective:

Given the movie, The Hunters*, and the definitions of birth rate, death rate, migration, life expectancy, population density and natural change, the student will be able to write down one example and one non-example of each of these concepts as seen in the movie.

Procedure:

1. Ask students if they remember the three variables of population change. Students should respond with the **answer** birth, death, and migration.

2. List the following terms on the board and ask students to volunteer to define or give examples of or non-examples of each one. Either through class consensus or with the help of the teacher the following definitions will be on the board and copied by the students:

   a. Birth Rate-the annual number of live births per thousand population

   b. Death Rate-the annual number of deaths per thousand population

   c. Migration-the process of moving from one place to another

   d. Life Expectancy-the average age a person can expect to live in a particular society

   e. Population Density-the number of people living per square mile in a given area

3. Explain to the students that the film is about the Bushmen of Western Africa who are still living like this today. Ask them to look for examples of the preceeding concepts in the film.

4. Only show the first reel of the film up until the point where the Hunters go out on their hunt (about 25 minutes).

*Contemporary Films (1958), 16mm. 72 minutes, color. Can be obtained from Florida State University Film Library, Tallahassee, Florida 32306.

5. After the film is over ask students to share their examples of the demographic concepts with the class. The teacher might want to write these on the board. After the examples have been shared, ask students to think of non-examples of these concepts as they existed in the film. For example, if a student had said that the Bushmen move from place to place (migrate), then he could say that his family was a non-example of migration, because they have lived in the same town for thirty years.

6. In closing ask students if, according to their definition of Population Problem, a population problem exists in this Traditional Society of the Bushmen.

#3 Traditional Society

Long Range Objective:

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

To make students aware of the consequences of population change through the instruction concerning the three stages of population growth.

Enabling Objectives:

Given a slide presentation on the Tasaday Tribe of the Philippines, that includes information about total population and age-sex makeup and given instruction about population graphs and population pyramids each student will choose the population graph and population pyramid that characterizes the population of this society.

Given the generalization explaining that if a society has a high birth rate and a high death rate then there will be little or no population growth and given several graphs and pyramids exemplifying various stages of population growth each student will identify the graph and pyramid that explains this generalization.

Given a definition of population problem and a slide presentation on the Tasaday Tribe of the Philippines with pertinent demographic information, each student will write in his own words whether or not he feels a population problem exists in the Tasaday society.

Procedure:

1. Teacher should give out the handouts on Population Graphs and Pyramids. Go over the handout one point at a time helping students to answer the questions. Do not answer the questions concerning the Tasaday until after the slides have been shown.

2. After going over the handout, ask for a student to make some sort of "if, then" generalization about the type of population growth that would take place in a society that has a high birth rate and a high death rate. You might want to just give the students the generalization: If a society has a high birth rate and a high death rate, then little or no population growth will take place.

3. Show the slides and give students a narration that will give them some background information on this group of people.

4. After the slides are shown, have the class work together to answer the questions on the Tasaday tribe. After each student has answered the questions, the class should discuss the given generalization and how it relates to the graphs and pyramids on their handout.

5. Finally, have the students refer back to the definition of a Population Problem and write down in a few words whether or not they feel a population problem exists in the Tasaday Society. Discuss students' feelings on this topic.

POPULATION CHANGE TABLE

		Birth Rate	
		high	low
Death Rate	high	-0-	-
	low	+	-0-

- = declining population

+ = increasing population

-0- = relatively stable population

This table excludes the third key factor: migration (emigration, immigration)

Guide for Tasaday Slides*

Slide #1 (map of the home of the Tasadays)

Background information: In 1967 Dafal, a hunter-trader, made contact with the Tasaday. He wanted to hunt deer and pig in the rain forest where the Tasaday live. He soon made friends with them and brought them some tools from the outside world. It was not until 1971, however, that other outsiders came to meet and study the Tasaday. Sec. Elizalde, head of Panamin (Presidential Arms for National Minorities) had heard of these primitive people and it is his job to protect such minorities.

Slide #2 This is a picture of the rain forest where the Tasaday live. You can see why these people had not been discovered before in these dense forests.

Slide #3 Sec. Elizalde and his men had to build this tree-top perch, because their helicopter could not land in the forest. Instead, the men would jump from the helicopter into the little basket on top of the perch.

Slide #4 This is a picture of some of the tribe members staring down from their main cave.

Slide #5 This young Tasaday named Lubu is scampering through the forest, climbing vines and slender trunks.

Slide #6 This is a picture of a young bachelor named Balayemen. He is lounging in his own private cave.

Slide #7 This is another picture of Balaymen holding a ratan tied stone-ax used to smash hard fruits. These plus digging sticks, stone scrapers and sharpened bamboo knives were all the tools they had till later when outsiders came.

Slide #8 This is a picture of some of the food the people eat. They collect food only a few hours a day. In the picture are tadpoles, frogs, fresh water crabs, biking, wild yams, wild bananas and ubud which is the main food.

Slide #9 This is a picture of a man eating some ubud. It is a forest delicacy with the taste of an artichoke heart.

**Slide #10
#11
#12** When Dafal the hunter-trader came in contact with the Tasaday he taught them how to extract natok--a new food from palm. In these three pictures the people are in the process of making this new food.

Slide #13 This is a picture of the Tasaday eating the dried natok.

Slide #14 The Tasaday are one of the few peoples left in the world who still start their fires in this manner.

*Pictures are from National Geographic, August, 1972, pp. 219-249.

Slide #15 Finally, after ten minutes they start the fire. They call
#16 others around to enjoy the warmth of the fire and to talk.

Slide #17 The parents are very loving. Both the father and mother
#18 spend a great deal of time with the children. Quite
#19 often a child will be nursed until he is three or four,
as in this picture. The people never strike their
children, but put their emphasis on love and affection.

Slide #20 This is a picture of more members of the group. Unfortunately, this picture erased the usually friendly look of the people.

Slide #21 This picture includes almost all of the 24 members of the tribe. It is difficult to tell age or sex of the group members. The red-headed child is an albino.

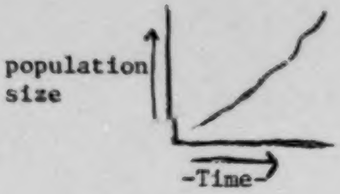
Slide #22 It has been said that "nothing is more gentle than man in
#23 his primitive state" -- Rousseau. Look at the following
pictures of young Tasaday children, and arrive at your own
description of these people. (Note that the second child
holds a tool or weapon brought in from the outside world.)

Population Graphs and Pyramids

I. Graph Exercise:

How does population change over time?

a.



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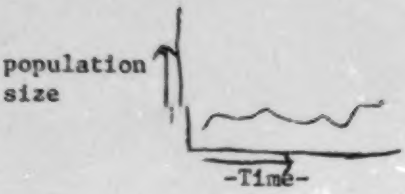

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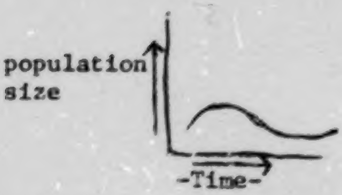

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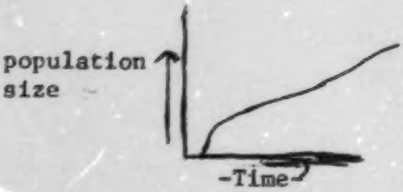
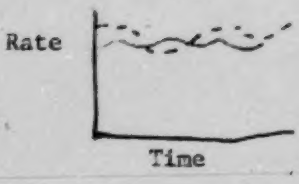


According to each one of these graphs how is the population changing over time?

(---------) (__________)

How do the birth rate and death rate cause population change?

a.



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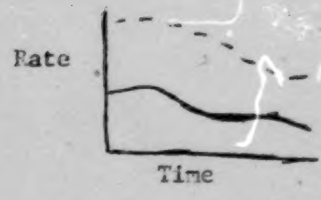

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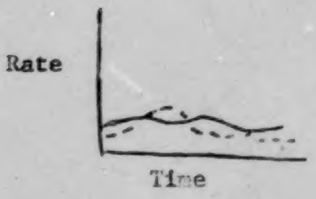
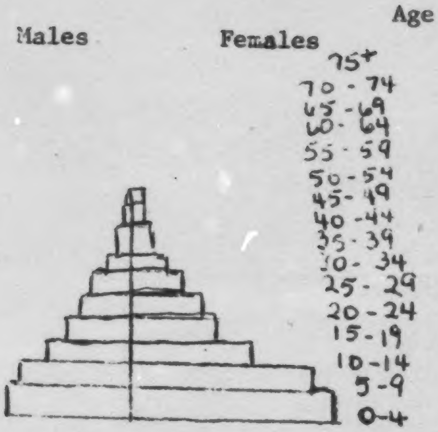
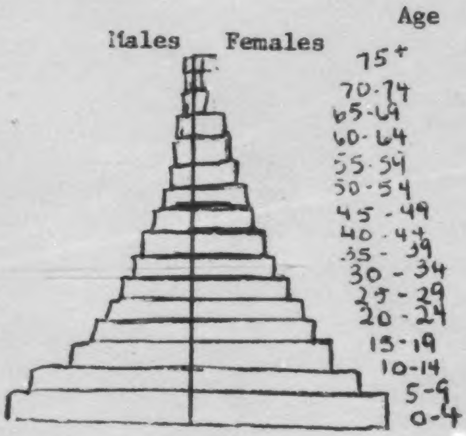


1. In which graph is there a low birth rate and a low death rate? _______
2. In which graph is there the greatest amount of population growth? _______
3. Which graph could you use to describe the population of the Bushmen? the Tasaday? _____________
4. In which graph is there a low birth rate and low death rate? _________

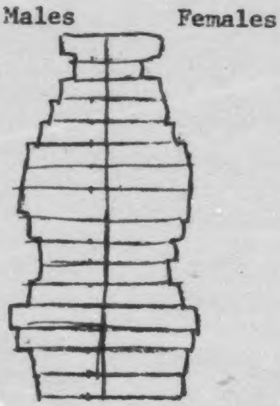
II. **Population Pyramids:** The population pyramid is a bar graph showing the distribition of a population by age and sex at a particular period of time. The youngest age is at the bottom of the graph and the oldest age at the top. The left side of the pyramid shows males and the right side shows females. Population pyramids have different shapes according to the age and sex structure of the population. Countries with high birth rate and high death rate have age-sex pyramids that look like a drawing of an ancient Egyptian pyramid. Countries with low birth rates and low death rates have elongated population pyramids.



PYRAMID A



PYRAMID B



PYRAMID C

1. Which one of these pyramids would show you the population of a country with a high birth rate and high death rate?_____

2. Which one of these pyramids would show you the population of a country with a low birth rate and low death rate?______

3. Which one of these pyramids would show you the population of a country with a high birth rate and low death rate?_________

4. Which one of these pyramids would be most like the population of the Bushmen (from film)?______________

5. Which one of these pyramids would be most like the population of the Tasaday Tribe of Minandoa?

____

#4 Traditional Society

Long Range Objective:

To make students aware of the consequences of population change through the instruction concerning the three stages of population growth.

Enabling Objective:

Given a role playing activity explaining life in a traditional village and given the generalization describing a traditional society as one that has a high birth rate, high death rate, and a small natural change, each student will list at least three factors that sustain a high birth rate in a traditional society.

Long Range Objective:

To build up students' feeling of personal relevancy and empathy to the subject of population through role playing exercises.

Enabling Objective:

Given a role playing exercise and given each student's participation and discussion of the exercise, students will express behaviors of empathy.

Procedure:

1. Assign the following roles to students:

   -4 farmers
   -4 wives
   -2 grandmothers
   -1 grandfather
   -1 uncle
   -8 live children
   -14 children who have died

2. Describe the families as follows:

   -farmer #1 has 6 children (2 live; 4 die), one wife, and one grandmother living together.

   -farmer #2 has 8 children (5 live; 3 die), and one wife in his family.

   -farmer #3 has 5 children (1 lives; 4 die), one wife and one old uncle in his family.

   -farmer #4 has 3 children (none live), one wife and his mother and father living in his home.

3. Have the students actually get into their family groups. There should be four different groups in the class. Have the farmers arrange their chairs in the center of the class and read their parts (see white page).

4. After the farmers have read their parts, have them go back to their family groups. Ask students some of the following questions to evaluate their ability to empathize with these people:

   -Wives: You were not given a chance to speak before. How do you feel about all those children--having them, losing them, etc. How do you feel about having other older members of the family living with you? Do you feel like you are a very important part of the family?

   -Dead Children: What is your reaction to the way your fathers are talking about you? Do the girls feel any different than the boys?

   -Living Children: How important do you feel as a family member? Do the girls feel any more or less important than the boys?

   -Older Family Members: Do you think it is right for your children to take care of you in your old age?

5. After many of these questions have been answered, stop the discussion for a moment and ask students to refer to the generalization they have describing this type of society. (If a society has a high birth rate and a high death rate, then little or no population growth will take place). Ask students to list at least three reasons explaining why traditional societies have high birth rates:

   a. Need for children to do work (especially sons)
   b. Family pride (many sons imply a manly father)
   c. Religious beliefs (the gods pay those who do good with many children)

Life in a Traditional Village: Listen to the Farmers

#1 I tell you, we have to keep working all day. It seems we just never have enough. I am sure glad I have my 2 sons to help me. You know we lost our 4 daughters, but thank goodness I have my sons to work the crops. My mother-in-law lives with us too you know, but she can't work at all. We just have to take care of her. I'm sure my sons will remember my wife and I when we reach our late forties too.

#2 Well, my crops are more than enough for my family. The weather has been very good, but also my four boys have helped me expand our production. You know we took care of my mother and father for five years, but now that they have passed away we have even more for the family. I was saddened when we lost 2 baby girls and one boy, but I am still very proud to say that I have the most children in the area. The gods must have chosen me for this special honor.

#3 (Say to #2) I know that you are very proud of your large family and rightly so. Only a fine man like yourself could be so fortunate as to be the father of so many healthy children. As you all know my wife and I only have one daughter and although I do love her, I need a son to help me work and to carry on the family name. We've lost 2 sons and 2 daughters, but we are going to keep praying for some more children. My old uncle can help me with some of the easier work, but not with the backbreaking work. Oh, I hope a son will be coming soon before my uncle can't work at all.

#4 Well, I've listened to all of you discuss your families and all I can say is that I envy each of you. As you know, I've had to quit working some of my land, because there just aren't enough hours in the day to work it all by myself. I must support my mother and father as well as my wife and it is almost too much to handle, but my father provided for me and now I must do the same for him and my mother. My wife has lost three children, but she is going to have a child soon and I hope it will be a healthy son.

#5 Transitional Society

Long Range Objective:

To make students aware of the consequences of population change through the instructions concerning the three stages of population growth.

Enabling Objective:

Given a role playing activity depicting the change from a traditional society to a transitional society and given class discussion and teacher comment on the activity, each student will list three characteristics of a transitional society.

Long Range Objective:

To build up students'feelings of personal relevancy and empathy to the subject of population, and the people affected, through role playing activities.

Enabling Objective:

Given students participation in a role playing activity depicting change from a traditional society to a transitional society and given classroom discussion of the activity each student will express the behavior of empathy for the role they played or for the roles others played.

Procedure:

1.* You will need 200 coins or buttons.

2. The teacher has 10 students stand holding hands in a circle with 20 other students forming a larger circle outside the smaller circle.

3. The teacher scatters evenly 200 coins around the edge and center of the inner circle and tells the students "The inner circle represents a Traditional Society and the coins are the good things of life for you to pick up."

4. Ask students if they remember the generalization describing a Traditional Society. Review the generalization and tell the students to keep it in mind during the game.

5. Begin the game by telling the students that they cannot move their feet, but may pick up as many coins as they can reach. Tell the students in the outer circle to watch carefully.

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*This exercise is adapted from *Curriculum Improvement for Population Education in the Elementary and Secondary Schools of the Republic of Korea* (The Second Stage Final Report), Hyun Ki Taik, *et al*, Central Educational Research Institute, Seoul, Korea (1972), C.H. Adair, Consultant.

6. The students will pick up as many coins as possible in accordance with the teacher's directions.

7. The teacher asks the students to tell him how many good things each of them picked up. The teacher will then ask the students how this game of a Traditional Society related to the generalization describing a traditional society.
    - Were students able to reach all the coins?
    - Do you think the people of the traditional society will be able to use all the good things that they have nearby?

8. Tell students, "The second game is in a Transitional Society. Does anyone know what we mean by transitional?"

9. A student or the teacher should respond by saying that transitional means change. The teacher will explain further that the Transitional Society is one that has a population that is changing (growing) rapidly.

10. Ask 15 students from the outside circle to come into the inner circle to represent the growth in the population of the Transitional Society. At this time ask the students how this sudden growth might have occurred.
    - Review three variables of population change (birth, death, migration).
    - Suggest intervention from the outside (health care, food, etc.)
    - Effects of birth rate and death rate

11. The teacher throws out the 200 coins again and instructs the (original 10 and the added 15) to pick up as many of the coins as they can reach without moving their feet.

12. When the students are through with counting the coins each of them picked up, they report these numbers to the teacher. The teacher will then report the largest and smallest numbers of coins picked up by the students.

13. The teacher should ask students to present their own opinions on the question, "What are the differences you have noted between the two games or two societies? (differences in population, birth rate, death rate, population density, available resources, etc.) After the presentation of opinions by the students, the teacher could summarize the presented opinions and say, "This second game was about a Transitional Society and you should have noted how hard it is for you to pick up the coins which represent the good things of life."

14. Give out handout and help students answer the questions.

15. Ask students to list three characteristics of the Transitional Society.
    - a society of population change (growth)
    - high birth rate and declining death rate
    - increase in population is almost like a population explosion

What Happens to the "Good Things" in a Transitional Society?

*Look at the Increase in the Cultivated Land and the Increase in the Population of Egypt:

Year	Cultivated Area (million acres)	Population (millions)	Cultivated Area (acres per person)
1897	5.1	9.7	54
1907	5.4	11.2	50
1917	5.3	12.8	43
1927	5.5	14.2	40
1937	5.3	15.9	34
1947	5.8	19	32

Answer

1. Which one of the three categories has increased the most since 1897?

2. Which one of the three categories has decreased since 1897?

3. Explain how your answers to Questions 1 and 2 relate to each other.

4. If you had your choice, at what time and under what conditions would you have lived in this country? Explain your answer.

5. As the number of people in an area increases, what happens to the "Good Things"? Give examples from the chart.

*Adapted from Doreen Warriner, Land Reform and Development in the Middle East. London: Oxford University Press, 1957.

#6 Transitional Society

Long Range Objectives:

To make students aware of the consequences of population change through the instructions concerning the three stages of population growth.

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

Enabling Objectives:

Given the generalization describing a Transitional Society (If a society has a high birth rate and a declining or low death rate then there will be a rapid growth in the population of that society - a "population explosion") and given population pyramids and population graphs of three different stages of population growth, students will choose the pyramid and graph depicting a Transitional Society.

Given the definition of a population problem and given examples of the population situation in several transitional societies students will write in their own words whether or not they feel a population problem exists in a Transitional Society.

Procedure:

1. Ask the students to get out their pyramid and graph exercise sheet from Lesson #3 (Teacher might also want to have a transparency of this exercise).

2. Ask for a volunteer to explain the pyramid and graph of the Traditional Society according to the generalization they had studied describing a Traditional Society.

3. Put up a transparency and give out a handoot to the students containing several pyramids and one graph for transitional societies. (Ceylon, Mexico, and Peru).

4. Ask for volunteers to review what we mean by transitional (change-population growth) and how this "change" might have come about (examples - medical advancements; technological advancements; aid from other countries etc.) (Examples - birth rate increases; death rate decreases).

5. Ask students to look at the new pyramids and graph and ask for a volunteer to explain the population situation in Mexico (for example).

6. Ask students to get more specific and try to reach some sort of "if" "then" generalization describing the birth rate, death rate, and population growth in a Transitional Society: If a society has a high birth rate and a declining or low death rate then there will be a rapid growth in the population of that society - a "population explosion".

7. Ask the students to look at the other pyramids and see whether or not they are also of Transitional Societies. Students should explain why they agree or disagree that a particular pyramid depicts a Transitional Society.

8. Ask the students how they think this decrease in death rate and increase in the birth rate might have come about. List the different examples on the board. (Repeat with further details of Step #4).

9. Respond to the students' list by asking them to think about these countries and what the quality of life is like in these particular places. The students should mention personal experiences or things they have learned about living conditions in any of these Transitional Societies.

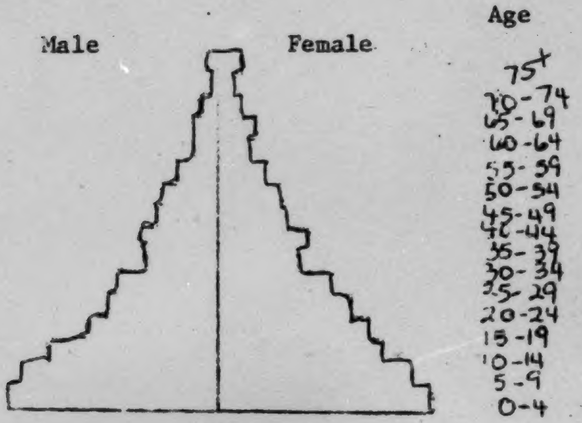
10. Ask students how the "real world" situations of these Transitional Societies compares to the exercise the day before.
What happens to the coins or "good things of life" in these Transitional Societies as the population increases.

11. Ask students to write down in a few sentences whether or not they feel a population problem exists in these or other transitional societies.

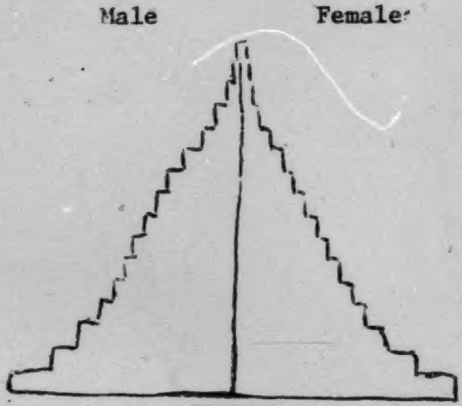
12. Close class by telling students that they should think about the life of a person in one of the countries, because they will be in "his shoes" the next day.

Pyramids of Three Transitional Societies*

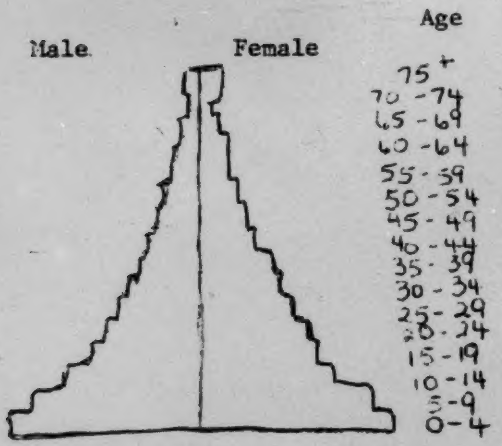
Generalization:



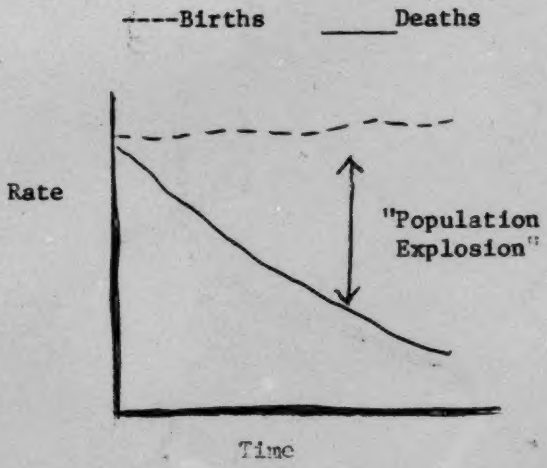
MEXICO



CEYLON



PERU



Do you feel a problem exists in these or other transitional societies?

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*Population Reference Bureau, Population Bulletin, Vol.XVI, No.8, December, 1960, p.159.

#7 Transitional Society

Long Range Objective:

To build up students' feelings of personal relevancy and empathy to the subject of population through role playing activities.

Enabling Objectives:

Given the generalization describing a Transitional Society (If a society has a high birth rate and a declining or low death rate then there will be a rapid growth in the population of that society), and given each student's participation in a game depicting different ways this rapid population growth affects the lives of people in a Transitional Society, students will express behaviors of empathy.

Procedure:

1. Ask students to get into groups of six. When students are in the groups, ask for a volunteer to review the generalization of a Traditional Society and Transitional Society.

2. Ask for a volunteer to review some of the ways a society changes from a Traditional Society to a Transitional Society.

3. Tell the class that they will have a chance to experience the change that a member of a Traditional Society experiences when population begins to grow rapidly and a Transitional Society is developed.

4. Give each group their cards (situation cards and point cards) and one member of the group will be appointed scorekeeper.

5. Explain to the students that the name of the game is "The Good Life," and that the goal is to get the most number of points you can. The more work points one has the more of the "Good Life" he can buy.

6. Begin the game and be sure each group has rule sheet, cards and score card.

7. After students have completed the game ask them some of the following questions:
   a. When the game first started, what did you think was going to help you get work points? (Example: Did you think the Health Cards would give you all the points?)
   b. As the game went on, what did you find gave you work points? Was it hard to gain points?

8. Ask students if the name of "The Good Life" can actually be achieved in this game or in any Transitional Society? (The "Good Life" refers to quality of life not material "extras" as we may think of in our society).

9. Ask how the winners of the game felt. Did they feel like they had really won?

10. Ask students "Why can't the members of this Transitional Society with all the outside help it is receiving reach the Good Life." Their reply should contain the point that such rapid population increase holds down progress and the quality of life.

"The Good Life"

Rules

1. Each person should draw a Who and Where Card.

2. Put the point cards in the four piles they belong in (Health, Services, Food and Clothing, and Wild Card).

3. Scorekeeper should write down the work points each student has on his Who and Where Card.

4. Begin the game! The player to the left of the scorekeeper should draw any point card he wants.

5. After the first player draws a point card, he can keep it or put it in a discard pile. If he discards he does not win or lose any points, but each player can only discard 3 cards during the whole game. Scorekeeper keeps a watch on how many times each student discards.

6. The game continues as each person draws any card he wants, reads to the group what the card says and tells the scorekeeper how many points to add or subtract from his total score.

7. When all the Point Cards are gone the person with the most points is the winner of "The Good Life."

WHO? WHAT? & WHERE? CARDS

SCORE CARD

Player #1
Who? What? Where?

You are an Indian in Peru. You have six children and one wife. All of your children can help you work except your baby daughter.

You begin with 70 work points (10 points for each working person in your family)

Player #2
Who? What? Where?

You work on a tea plantation in Ceylon. Your wife and four teenage sons also work with you.

You begin with 60 work points (10 points for each working person in your family)

Player #3
Who? What? Where?

You have a small piece of land in Mexico. You and your family (wife, two sons, two daughters and your father) grow corn on this land. You eat your corn and sell some of it to friends. Your father is too old to work.

You begin with 60 work points (10 points for each working person in your family)

Player #4
Who? What? Where?

You grow cotton along the Nile River Valley in Egypt. You and your wife have five children that help you work in the fields and two small children at home. Your mother lives with you and takes care of the babies.

You begin with 70 work points (10 points for each working person in your family)

Player #5
Who? What? Where?

You work on a coffee plantation in Costa Rica. Your wife and twin boys stay at home, but you and your five sons work on the plantation every day.

You begin with 60 work points (10 points for each working person in your family)

SCORE CARD

	Beginning	Discards	Add	Subtract	Tot
Player #1	70				
Player #2	60				
Player #3	60				
Player #4	70				
Player #5	60				

HEALTH CARDS

HEALTH CARD

The United Nations brings in doctors to help deliver new babies. Congratulations, your wife has just had twins.

Lose 10 work points

Sorry your wife will not be able to help you work. She will have to take care of the twins.

HEALTH CARD

CARE has sent medical supplies to your country. Your family is much healthier this year and has been able to work extra hours.

Add 15 work points

HEALTH CARD

Your youngest child is given malaria shots and lives through his illness. Your wife will have to take care of him and you will have to feed him.

Lose 10 work points

HEALTH CARD

The water is purified in your village and your family is much healthier this year (+ 15 points). Because your family is healthier, it continues to grow. You have three more children. (-20 points)

Lose 5 work points

HEALTH CARD

A U.N. doctor helps set your son's broken arm. He is able to get back to work in the fields much faster.

Add 5 work points

HEALTH CARD

A government veterinarian gives your ox some shots. Instead of dying of a fatal illness, he lives and works harder than ever.
(- 10 points to pay veterinarian)
(+ 20 points for work ox does)

Add 10 work points

HEALTH CARD

Your government helps drain a nearby swamp and much less disease is spread.
(Add 15 points for good health)
(Lose 10 points because you have to take time off to drain swamp)

Add 5 work points

HEALTH CARD

A small hospital is built in your village. You had to take a few days off to help build the hospital (lose 20 points); but the doctors have helped your family (add 10 points).

Lose 10 work points

SERVICE CARDS

SERVICE CARD

Your government has built a school in your village. Your children will have to go to school at least three days a week.

Lose 15 work points

SERVICE CARD

New roads have been built to your village. Your old uncle moves from another part of the country to live out the rest of his days with your family.

Lose 15 work points

SERVICE CARD

Three new families come to your village on the new railroad. They decide to stay and live in your area. The three men of these families get the job you wanted your son to get.
(Add 10 points for help new railroad brings)
(Lose 5 points for the job your son lost)

Add 5 work points

SERVICE CARD

The government gives your village a truck to share. It is really going to help each member of the village (Add 15 points), but you find everyone loses time trying to agree on who needs it the most or when a person can use it (Lose 10 points).

Add 5 work points

SERVICE CARD

Your oldest child takes the bus to the nearest city to attend the new school and get a job.
(Lose 10 work points because son leaves)
(Add 5 work points because you won't have to provide for your son)

Lose 5 work points

SERVICE CARD

Building supplies are sent from other countries. You are very happy to build a new house which your family has needed (Add 25 points). Unfortunately, you'll have to take time off from work to build your house (Lose 20 points)

Add 5 points

SERVICE CARD

The government installs a water pump for the whole village to use.
(Add 20 points for time and work saved).
(Lose 5 points because you miss work arguing over who should get the water.)

Add 15 work points

SERVICE CARD

Six new families migrate to your village, because the government has built a small military outpost here. You have to give up some of your land for the new families to build their homes on.

Lose 10 work points

FOOD AND CLOTHING CARDS

FOOD AND CLOTHING CARD

Your government sends in free fertilizer. You use the fertilizer on your crops and production increases.

Add 10 work points

FOOD AND CLOTHING CARD

You have new fertilizers and pesticides to help you grow more crops (add 40 points). With all the medical help, however, your family now has four more children for you and your wife to care for (lose 50 points).

Lose 10 work points

FOOD AND CLOTHING CARD

The village is given four sewing machines and a large shipment of material. Your wife is the best seamstress in the village and has to teach the other women to use the machines.
(Add 10 points for help of sewing machines)
(Lose 20 points because wife can't help you).

Lose 10 work points

FOOD AND CLOTHING CARD

Each household is given a loom. The women can make their own material now quite easily (add 20 points). The only problem is that they spend time sewing rather than doing their other work (lose 10 points).

Add 10 work points

FOOD AND CLOTHING CARD

You and your neighbor are given some pesticides to use on your crops (add 25 points). You did not know it, but the pesticide got into your mule's water and he died. (lose 30 points).

Lose 5 work points

FOOD AND CLOTHING CARD

Packages of food and clothing are sent in from more wealthy countries (Add 40 points). Some of the people tear the clothes and spill the food as they try to decide who should get what (Lose 20 points).

Add 20 work points

FOOD AND CLOTHING CARD

Your community is given one tractor (add 50 points). Although the tractor could do the work of five men, you only get to use it once a month. The rest of the time your crops have to depend on you and your ox. (Lose 45 points).

Add 5 work points

FOOD AND CLOTHING CARD

You are promised a tractor of your own (add 50 points). The only catch is you have to give up one-half of your land to the other new people in the village (lose 55 points).

Lose 5 work points

WILD CARDS

WILD CARD

The new pesticide you are using to improve your crops (add 25 points) has gotten into your drinking water. Your three oldest children die (lose 30 points).

Lose 5 work points

WILD CARD

Your youngest daughter was made a foster child to a family in another country. You will receive money every month for your daughter.

Add 10 work points

WILD CARD

A fight for land starts between the new people who have just moved to the village and you and your friends. You lose one week of work and one-fourth of your land.

Lose 20 work points

WILD CARD

With all the new people around it is hard to know who to trust. This morning you woke up and your mule was gone. You just can't believe that there is a thief in your village.

Lose 15 work points

WILD CARD

Your son writes you that he really likes living in the city. He sends you part of his pay check and tells you about his job.

Add 15 work points

WILD CARD

The rainfall was just perfect for your crops this fall. You grew more than ever and without doing any extra work.

Add 15 work points

#8 Modern Society

Long Range Objectives:

To promote students' awareness of the need to maintain a balanced relationship between population size and the natural environment.

To make students aware of the consequences of population change through the instructions concerning the three stages of population growth.

Enabling Objective:

Given a data sheet listing the Earth's resources consumed by the average American citizen and given a class discussion of this data, each student will list three steps he or she can take to cut down on their consumption.

Procedure:

1. Ask students to read over the handout silently.
2. Go over the sheet with the class and stop at the end of Section I. Ask students how they feel when they think that they use all of these resources? (Example: Ask one student what he feels like when he thinks that he uses 1,000 trees in his lifetime?)
3. Go over Section II with the students. Once again they should react to the data.
4. Ask students to take a close look at #4 (The planet must also provide goods and services for the other 93 percent of its human population to say nothing of the demands placed upon it by its nonhuman population). How would they feel if they were not a member of our Modern Society, the U.S.A.,but a member of one of the other societies (U.S.A. is only 7% of world's population; others are 93%)?
5. Ask students to take a close look at #5. Do the class members feel there is a limit to the planet's goods and services? If there is a limit, what are Modern Societies like the U.S.A. doing about the limit?
6. Go over Section III. Discuss these different solutions to the "Planet's Problem." Which solution do students feel is the best? Are any of the solutions already at work?
7. Ask students to read and think about Section IV before they begin to write a short answer. Remind the students that their answers should contain at least three steps they themselves could take to help cut down their consumption of the planet's resources. Discuss the students' different answers if time allows for it.

Put Yourself in the Planet's Shoe *

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*Reprinted from Richard L. Heiss and Noel F. McInnis, editors, *Can Man Care for the Earth?* (Nashville: Abingdon Press, 1971), pp. 92-94.

IV. Questions

What would you do if you were in the planet's shoe?
You are you know.

So what would you do? Give up?
That's a good place to start. What are you going to give up?

List at least three steps you can take to cut down on your consumption of the planet's resources.

# 9 Modern Society

Long Range Objectives:

To make students aware of the consequences of population change through the instructions concerning the three stages of population growth.

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

Enabling Objectives:

Given the generalization describing a Modern Society (If a society has a low birth rate and low death rate then little or no population growth will take place) and given population pyramids and population graphs of three different stages of population growth, students will choose the pyramid and graph depicting a Modern Society.

Given the definition of a population problem and given examples of the population situation in several modern societies, students will write in their own words whether or not they feel a population problem exists in a Modern Society.

Procedure:

1. Ask students to take out the pyramids and graphs they have for Traditional and Transitional Societies. Review the generalizations that explain these graphs and pyramids.

2. Ask the students what they think a graph or pyramid for a Modern Society might look like. Students might show examples from their previous exercises. (Lesson #3 contains graph and pyramid of a Modern Society).

3. Give out handout of the graph and pyramids depicting the population situation in several modern societies. Also, use transparency of the exercise.

4. Ask students to look at Sweden's pyramid and tell the class something about the birth rate and death rate in that country. What do the students think the population growth is like in Sweden?

5. Ask for volunteers to put the relationship of this low birth rate and low death rate to the population growth in an "if-then" statement. (If a society has a low birth rate and low death rate, then little or no population growth will take place). Does the graph depict this generalization?

6. Have students look at all the pyramids on the exercise sheet. They should compare and contrast the pyramids. (Example: U.S. has more births; Japanese births have dropped sharply; etc.)

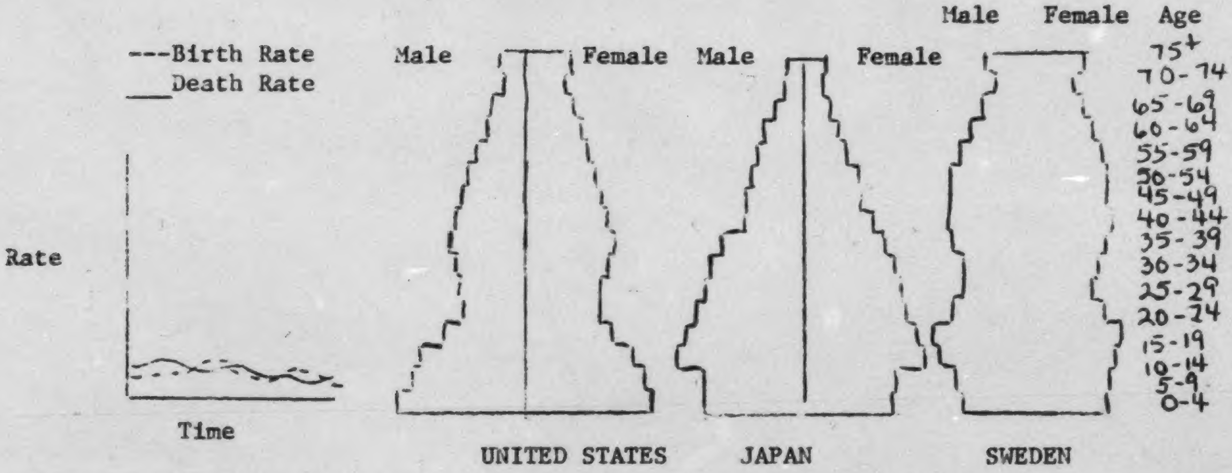
7. Ask students to apply the exercise of the previous day ("Put Yourself In the Planet's Shoe")to these modern societies. Do these countries use many of the earth's resources? Give examples of how one of these countries uses a great deal of resources (Example: Japan is very industrial).

8. Ask students if they feel a "population problem" exists in these modern societies or do these countries create a "population problem" for the whole earth? Students should write down their answers in a short paragraph on their exercise sheet.

9. Finally, ask students to reflect back on the list they had made of things they could do to cut down on consumption. Can they add other steps they might take to solve population problems? Have them write their answer on the exercise sheet.

Population Pyramids of Three Modern Societies

1. Generalization: Write in the generalization that describes the population situation in a Modern Society like the U.S.A., Japan, or Sweden.



2. How are these pyramids alike?

   How are they different?

3. Do you feel a population problem exists in any of these Modern Societies? Do these Modern Societies create a population problem for the whole earth?

4. Can you add to the list you made yesterday of things you can do?

#10 Review of Three Societies

Long Range Objectives:

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

To make students' aware of the consequences of population change through the instructions concerning the three stages of population growth.

Enabling Objective:

Given eighteen cards containing characteristics or examples of Traditional, Transitional and Modern Societies and given previous instruction on these three stages of population growth and the basic demographic concepts and processes, each student will divide the cards into three separate piles, according to which society they characterize or exemplify.

Procedure:

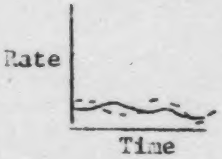
1. Give out a sheet to each student and have them cut up the cards.
2. After students have cut up the cards, tell them that the cards contain characteristics or examples of the three stages of population growth that have been studied. Each student should put the cards into three different piles according to which stage (Traditional, Transitional or Modern) they describe. (Traditional - #2, 5, 8, 11, 12, 18; Transitional - #1, 6, 9, 13, 15, 17; Modern - #3, 4, 7, 10, 14, 16)
3. Have a short discussion about the categorization of the cards. Hand out the work sheet and ask students to use their notes and cards to help them answer the questions.
4. After students are finished, go over the papers to make certain students have the correct answers.
5. Tell students to keep the cards and worksheet because their final test will be from this type of material.

1. If a society has a high birth rate and a declining or low death rate then there will be a rapid growth of population in that society.

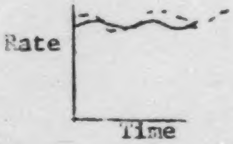
2. If a society has a high birth rate and high death rate then there will be little or no population growth.

3. If a society has a low birth rate and low death rate then there will be little or no population growth.

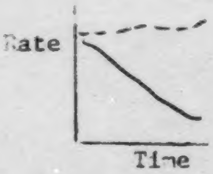
4.
---Birth Rate
___Death Rate



5.
---Birth Rate
___Death Rate



6.
---Birth Rate
___Death Rate



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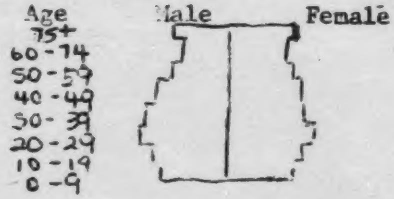

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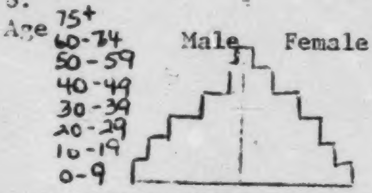
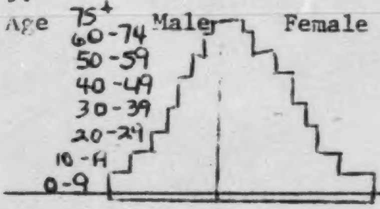


9.



10. I will give up:
a) Drinks in non-returnable bottles
b) Half the paper I use

11. "I am so proud of my large family." "The gods have rewarded me with ten children."

12. You could say that there is a population problem in this type of society, because the people usually have very harsh and short lives.

13. You could say that there is a population problem in this type of society, because the population is growing so rapidly that there just isn't enough land, food or other goods for all the people.

14. U.S.A., Japan, Sweden

15. My name means change.
A rapid change in the population.
A "population explosion" takes place.

16. You could say that there is a population problem in this society, because the people use more than their share of the Earth's resources.

17. Mexico, Peru, Ceylon

18. Tasaday Tribe of Mindanao
and
Bushmen of South West Africa

Review of Three Stages of Population Growth

1. List the four functions of population education. Give at least one example of how or where you have worked with each of these functions.

   a.

   b.

   c.

   d.

2. List the three means of population change. Give at least one example of each one of these means of change.

   a.

   b.

   c.

3. Define and give examples from your cards or notes of these concepts or processes.

   a. birth rate -

   b. death rate -

   c. migration -

   d. life expectancy -

   e. population density -

#11 Introduction to Ethics Cases

Long Range Objectives:

To promote students' awareness of the need to maintain a balanced relationship between population size and the natural environment.

To develop students' ability to make an analysis and evaluation of the population situation through the instruction given in basic demographic concepts and processes.

To make students aware of the consequences of population change through the instructions concerning the three stages of population growth.

Enabling Objective:

Given the film* Boomsville and given class discussion of the movie and the concept of "growth," each student will write a short paragraph including his analysis and evaluation of the population situation in the film and his opinion of how "growth" affects the natural environment.

1. Introduction

Tell the students that they are about to see a short film entitled Boomsville. Ask them to make inferences from the title: "What might this film be about?" "What would you expect to learn from a film entitled Boomsville?" Let students freely express their answers, occasionally requesting a reason for a particular inference.

2. Focus the discussion on the meaning of Boom in our culture. Massage this term in class discussion. In the nautical sense boom refers to spars for holding sails, rigging, and cargo. On cranes, the boom supports the weight to be lifted. On a sound stage, the boom swings a microphone over the heads of actors. "Lower the boom" is slang for prohibiting or punishing.

It is more common, however, to use boom as meaning "sound" or "rapid development." The cannon booms. Thunder booms. An explosion is heard by its boom. The SST makes a sonic boom. Boom is the product of a cause; we hear the boom and seek the cause. Booms as sudden noises or shocks need explanations as they startle us. But what of the boom that is a sudden or rapid development? The candidate's campaign booms. The town booms. Our economy booms. The population booms. Auto production booms. The stock market booms. "Boom or Bust" is a popular explication -- the willingness to shoot it all, to risk, to gamble, to chance opportunity or life for something perceived as making self successful. Boom, the noise, strikes our eardrums. Boom, the rapid development, seizes our psyches, absorbs self in a driving, striving run to growth and bigness. It's a Chamber of Commerce disease that directs our souls, gnaws at the bowels of the earth, and justifies itself in the thoughtless swelling of towns and production.

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*Boomsville. 11 minutes. color. sound. 16mm. 1970. Produced by Learning Corporation of America. Available on rental from The Media Center, The Florida State University, Tallahassee, Florida 32306.

There's a lot in this word boom. Meaning to be made in "reality" and in fantasy. Mess around with it. Let's let students massage the word for all its meaning, to us and to them. If discussion lags and teachers have the time allotted, turn with the students to an unabridged dictionary. Then, turn with them to the film itself.

3. Show the film without comment.

4. At the conclusion of the film, let students freely express their reactions to the film -- emotional and judgmental. As this discussion proceeds, the teacher should focus discussion upon the concept of "growth".

5. If students think that the animation is funny, explore this response. What do men find humorous? At what do men laugh? Why do they laugh? The students should see that humor deals with what is of concern to men. Then, the teacher can return to "what is of concern to men" in this film.

6. What types of "growth" are shown in the film? What is growing in the film? (Biological growth? Human growth? National growth? Community growth?) Was the growth shown in the film planned growth? Controlled or managed growth? Inevitable growth? How would you characterize it?

   How did you feel about the growth depicted? Was it desirable? Would you like to live in a society experiencing it? What costs are associated with growth? What do men given up? What destruction did you see in the film? Were these costs (destruction) justified by the growth (progress) made? What are the consequences for the other people in the world if one society grows in the ways we have discussed (population, pollution, use of resources, etc.)? Do men have to consume in order to exist? In order to grow? What might be some of the results if men continue to want to grow? Do you have any control over these results?

7. End the lesson by playing the film again without the volume on. Play the record "Where Do the Children Play" by Cat Stevens in the background.

8. Ask students to write a short paragraph that includes their analysis and evaluation of the population situation in the film and their opinions of how "growth" affects the natural environment.

#12 Ethical Questions

Long Range Objective:

To build up students' feelings of personal relevancy to the subject of population through role playing exercises and class discussion of ethics cases.

Enabling Objective:

Given two case studies concerning ethical questions about population and given class discussion of these two cases, each student will express his own personal views on these ethical questions by participating in the class discussion or by answering the questions on the exercise sheet.

Procedure:

1. Hand out an exercise sheet containing the two cases and questions.
2. Ask everyone to read the first case silently.
3. Ask someone to repeat in their own words what happened in the case.
4. Ask students what seemed to be the conflict or the problem in the case? Have they seen similar conflicts?
5. What alternatives are open in this conflict?
6. Discuss all of the points (Steps 2-5) and continue the same procedure with Case #2.
7. Ask students to answer the questions on their exercise sheets as the discussion goes on or at the end of the class period.

#1 Charles O'Ritz, a wealthy hotel owner has ten children, and his wife is now expecting number eleven. The whole family lives in a beautiful mansion in Marvin Gardens, just outside New York City. Mr. O'Ritz has just opened his morning newspaper, to discover a letter in the "Letters to the Editor" section from a local environmental organization in Marvin Gardens, attacking him for having so many children. "This is ridiculous!" shouts Charles. "We have a right to have as many children as we can afford - and we can afford dozens!"

1. What is the conflict in this case?

2. What alternatives does Mr. O'Ritz have?

3. What alternatives does the local environmental group have in this conflict?

4. What alternatives do you think you would choose if you were Mr. O'Ritz or a member of the local environmental group?

#2 Mr. and Mrs. Jones have a very happy family of five children. Their neighbors Mr. and Mrs. Wills are also very happy, but do not have any children. Mr. Jones and Mr. Wills both have the same job at a nearby factory; but each payday Mr. Jones takes home more money than Mr. Wills. Why does Mr. Jones take home more paymore even though men have the same job? Well, the U.S. government lets Mr. Jones pay less income tax so he will have more money to support his children with. Mr. Wills, on the other hand, cannot pay less income tax, because he does not have any children. Although Mr. Wills likes the Jones children, he does not think that it is fair for Mr. Jones to be "paid" in this indirect way for having children. Mr. Wills and his wife feel like they are the ones who should be paid for not having children because they are helping with the population and pollution problem.

1. What seems to be the conflict in this case?

2. What alternatives are open to Mr. and Mrs. Jones; Mr. and Mrs. Wills; the U.S. government?

3. Which alternative do you think would be the best choice? Which alternative would you choose if you were Mr. Jones, Mr. Wills, or the U.S. government?

#13 Ethical Questions

Long Range Objective:

To build up students' feelings of personal relevancy to the subject of population through role playing exercises and class discussion of ethics cases.

Enabling Objective:

Given each student's participation in the game Mother-of-the-Year and given each student's participation in the class discussion of the game, each student will be able to explain how the game relates to the population problem.

Procedure:

*Directions for Mother-of-the-Year

1. Divide the class or group into smaller sub-groups of six or seven people.
2. Give these directions:

    > This year you've been selected to serve on the National Selection Committee for the Outstanding Mother in our nation. Regional winners from various parts of the country are the finalists whose qualifications will be given to you.

3. Pass out a copy of the qualifications to each participant. Include pictures of the regional winners. (You can find appropriate looking pictures in newspapers and magazines.)
4. To ensure more thorough discussion the winner must be the unanimous pick of the selection committee.
5. Allow 20 minutes for junior high age groups.
   Allow 30 minutes for older groups. Give an extra ten minutes if they request it.
6. Have each group select one spokesman to give the various reasons for their selecting or rejecting certain finalists in picking the winner.
7. Open discussion to the whole group. You might ask some of the following questions.
    a. What qualities are outstanding in each individual? Which are weaknesses? Why?
    b. Who would you most want for your own mother? Why? Was this consistent with your selection?

*For further information on this game, contact Ed Havitz, Waverly West Junior High, 620 Snow Road, Lansing, Michigan 48917.

c. Should you have been given some criteria in making your selection? Did your group draw up any criteria?

d. Do you think a younger group would have made a different selection? Why? An older group? Why?

e. Who do you think would have been chosen if the selection committee weren't aware of a population problem?

f. What attitudes in our society make population control difficult? Why? Were some of these attitudes reflected in the discussion today?

MRS. JUNE HUNTER

37 years old
Mother of 3 boys, 2 in high school and one in junior high
All sons honor students
Elementary school teacher with 12 years experience
BS, St. Horus University, MS University of Missouri
Resident, St. Louis, Mo.
Past president of the Missouri Education Association
Led push for Missouri state public employees bargaining rights
Innovator in special education studies for slow learners
Presently programming a new math series for slow learners
Hopes of running for Missouri House in 1972
Democrat
Children admire Mom's leadership
Husband manages Montgomery Ward store in St. Louis suburbs
Sponsored by Greater St. Louis Business and Professional Woman's Association

MRS. ANN SEMMLER

29 years old
Mother of a boy four and a girl 2
Resident of San Francisco, Ca.
Feels that there are too many parentless children so has chosen to be sterilized and adopt her two children
Graduated from Vassar with honors - Phi Beta Kappa
Teaches a course on Women's Rights at the University of California at Berkeley
President of her local chapter of NOW
Member Minus 1 Population Growth and the Sierra Club
Hobby - gourmet cooking
Husband is a sales representative for IBM
Sponsored by The Association for Voluntary Sterilization

MRS. JAYNE WATSON

52 years old
Mother of 5 plus two adopted - total of 7
Resident, Montford, Alabama previously - now resides in Chicago, Ill.
Member of NAACP for 18 years, but does not consider herself a leader
4 sons have been in service in Korea and Viet Nam, one of whom was killed in action in Viet Nam
Does volunteer work at Community Action Center in spare time
Husband died five years ago - had been employed at National Motors
She is employed as a stock clerk in a chain food market
Sponsored by her local union

MRS. BETTY BAKER

49 years old
Immigrated from England 1947
Mother of 5 girls, 3 boys
Five graduates of CCNY, three in high school
Resident: Syracuse, New York
One son, doctorate in nuclear physics, MIT
One son in medical research in cancer
Girl Scout leader since 1953
Matron of Eastern Star
Winner of Syracuse Women's Club as outstanding woman of the year, 1959
Housewife
Republican precinct worker
Graduated from high school at age 40 - same class as second daughter
Ruling Elder - Episcopal Church
Sponsored by Syracuse Chamber of Commerce
Husband prominent corporation lawyer

MISS JOANN GREEN

32 years old
One son, four years old
Resident, Chicago, Ill.
Organized Chicago Chapter, Women for Women
States, "Children should be raised by committees including half male nurses."
Masters Degree, Chicago University in sociology
Magna Cum Laude
Sponsored by Cook County Chapter of WW
Presently writing book "The Future of Women in Eliciting Corporate Responsibility."
Refused Honorary Doctorate from Amstead College as irrelevant

MRS. JEAN FIXON

76 years old
Mother of 11, grandmother of 73, great-grandmother of 29
4 on the way (grandchildren)
Says children are the "spice of life and salt of the earth"
One of the original homesteaders in Balmer, Alaska
Believes "pioneers made America great"
Alaskan Mother of the Year, 1954 and again in 1969
Husband farmer - built 160 acre homestead into large 2000 acre dairy and strawberry farm in Lakamuska Valley
Sponsored by Anchorage Kiwanis Club and Founding Mothers of Alaska

#14 Ethical Questions

Long Range Objective:

To build up students' feelings of personal relevancy to the subject of population, and to those affected, through role playing exercises and class discussion of ethics cases.

Enabling Objective:

Given each student's participation in a role playing activity either as a player or observer and given a list of population issues and a reaction sheet, each student will complete the reactionaire exercise.

Procedure:

1. Give students a handout that describes the situation in the role playing exercise.

2. Ask for volunteers, or assign roles for senator, aide, black representative, Indian representative, Mexican-American representative and Moderator of debate.

3. Give the two groups their "Argument Sheets."

4. Assign the other students to observe a particular role player.

5. The moderator should allow the debate to begin and allow each side equal time. After each side is really into the debate, have the moderator call for a role switch. The two groups change Argument Sheets and the roles they have been playing.

6. Continue the debate after the switch. Allow the students to get back into the debate in their new roles.

7. Stop the exercise and ask the students to react to the population issues listed on their handout.

8. Go over the exercise with the class. Ask students if the debate before they filled out the reaction sheet had influenced their answers. Discuss reactions to the arguments in the role playing exercises too.

Argument Sheet

Senator and Aide: You will work together to present arguments supporting your bill. Here are some arguments you may want to use and you will want to add some more.

a. State and national governments are finding it difficult to support all the children on welfare. Therefore, if all the mothers and fathers on welfare who have more than two children are sterilized, then this will cut down on the demand for welfare.
b. Criminals have already proven themselves dangerous and a menace to society and probably could not be responsible fathers even when they got out of prison.
c. According to your information, most desertions are by Black and Mexican-American fathers. When they leave their families the state has to take care of the children.
d. Add some more arguments of your own before the debate begins.

Argument Sheet

Black Representative
Indian Representative
Mexican-American Representative

All three of you are sent by your people to publicly debate the Senator on his new Bill. You will answer his arguments in any way you choose and present your own arguments:

a. Is it not true, Senator, that many of the criminals behind bars are Black, Indian or Chicano? If you sterilize the criminals then you will be cutting down on the non-white population, right?
b. Senator, aren't you a very prejudiced man? Aren't you really afraid that the Black man and Indian are going to gain a great deal of power in this country if their population continues to grow as rapidly as it is now?
c. Our Constitution gives us the right to "life, liberty and the pursuit of happiness.' Your bill will be taking away those rights.
d. Add some arguments of your own before the debate begins.

I. **Description of situation**:

A Senator from a southern state has introduced a bill in the U,S, Senate that would provide for compulsory sterilization of all convicted criminals, all welfare recipients having more than 2 children and for all unemployed non-whites (Indians, Blacks, and Mexican-Americans) who have more than three children. At this very moment the Senator has agreed to meet with representatives from the Black, Indian and Mexican-American communities. Each side is voicing its views on the new legislation and a moderator is ruling over the debate.

II. **Time to React**:

1. A married couple has a right to have as many children as it can afford. Circle how you feel about this issue.

1	2	3	4	5
Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree

2. Nobody ever dies of over-population. Circle how you feel about this issue.

1	2	3	4	5
Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree

3. The population explosion is primarily a minority group problem. Circle how you feel about this issue.

1	2	3	4	5
Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree

4. Any couple who allows the birth of over two children is committing a social crime. Circle how you feel about this issue.

1	2	3	4	5
Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree

5. The government has a right and a duty to control population growth. Circle how you feel about this issue.

1				5
Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree

6. Choose one of the issues and list several reasons for agreeing with it.
   a.
   b.
   c.

#15 Ethical Questions

Long Range Objective:

To build up students' feelings of personal relevancy to the subject of population, and to those affected, through role playing exercises and class discussion of ethics cases.

Enabling Objective:

Given handouts on Attitudes on Family Size in Latin America and the attitudes of three young wives in the U.S.A., and given class discussion of these attitudes, each student will answer the questions on the exercise sheets concerning his own attitudes on family size.

Procedure:

1. Give students handouts on Attitudes on Family Size in Latin America and Three Young Wives Discuss Their Attitudes on Family Size.

2. Choose different students to read the quotes from Case I out loud. After reading over the quotes ask students for their comments or reaction to the quotes.

3. After short discussion, ask students to answer the questions on the exercise sheet.

4. Continue in the same manner with Case II.

5. After students have answered the questions, ask students to share their answers. The remainder of the class should consist of students discussing their attitudes about family size as related to those expressed in the quotes from handout I and the conversation in handout II.

I. Attitudes on Family Size in Latin America*

1.

2.

3.

4.

5.

6.

is all right too.

One can tell from such statements that ten children is viewed as a large family, and that three or less is probably viewed as a small one. But it is perfectly clear that one ought not to prefer one or the other, being grateful rather for whatever God chooses.

1. Who is responsible for bringing new lives onto the earth, according to these quotes?

2. Why do you think the people might say "thank you" for as many children as God gives them?

3. How would you feel about having eight children and losing six (quote#3)?

4. What will be the quality of the life these children grow up in?

5. How are your attitudes about family size similar or different from the attitudes expressed in these quotes?

---

*J.M. Stycos, Human Fertility in Latin America (Ithaca, N.Y.: Cornell University Press, 1968), pp. 126.

II. Three Young Wives Discuss Their Attitudes on Family Size

Anna, Virginia and Louise are three young wives who live in the same neighborhood. One day as they ate lunch together they started talking about children. Anna mentioned that she and Bill felt very strongly that they should wait until they were older and more settled before they had any children. Virginia agreed saying that it was quite a responsibility to bring a new life into this world. She said that she and her husband were very concerned not only with providing for the child, but also with the world population situation as a whole. Virginia even said that they were considering adopting a child rather than creating another person for the world to support. Louise spoke up and agreed with Anna and Virginia. She said "You know the thought of creating a new life, a whole new person, is overwhelming. Jim and I both want to have children, but only if we feel that our children along with all the other children born in the world at the same time have a chance to enjoy a good healthy, prosperous life.

1. Who do Anna, Virginia and Louise feel should be responsible for bringing a new life onto the earth?

2. If you had to agree with only one person - Anna, Virginia, or Louise, who would it be? Give at least one quote of what your choice said that makes you agree with her and explain your choice.

3. Do you think that the last sentence will ever come true? Why or why not? (Jim and I both want to have children, but only if we feel that our children along with all the other children born in the world at the same time have a chance to enjoy a good healthy, prosperous life).

4. How are your attitudes about family size alike or different from the attitudes expressed in this conversation?

#16 Ethical Questions

Long Range Objectives:

To build up students' feelings of personal relevancy and empathy for the subject of population, and to those affected, through role playing, class discussion and ethics cases.

To promote students' awareness of the need to maintain a balanced relationship between population size and the natural environment and resources.

Enabling Objectives:

Given a newspaper article stating the pros and cons of an ordinance to control population density and given a role playing exercise adapted from this article, each student will participate in the exercise and express the behavior of empathy for the role they hold.

Given a newspaper article stating the pros and cons of an ordinance to control population density and given a role playing exercise adapted from this article, each student will defend one argument by writing a short paragraph including at least three reasons why they agree with this argument.

Procedure:

1.* Give each student a copy of the 3 Situation Sheets (I,II,III)

2. Go over the situation sheets and discuss with the class what the conflict is.

3. Ask or assign students to take one side or the other. Set the front of the classroom up for a debate with two tables on either side and a place for a moderator in the middle.

4. Give each side their argument sheets. Students should have enough time to go over the sheet and plan their strategy. Remind them that they are trying to influence the people in the audience - the voters.

5. Have the moderator begin the debate and give each side a chance to present their arguments.

6. After the debate has covered most of the arguments, have the whole class fill out the form on Situation Sheet I and send it to the moderator in the front of the class.

7. Count the votes and list the reasons students gave for voting pro and con.

8. The remainder of the class can be spent discussing these reasons.

*All of these articles are from St. Petersburg Times, January 31, 1973,22-A.

SHOULD ST. PETERSBURG COUNCIL ADOPT THE PROPOSED ORDINANCE REDUCING POPULATION DENSITY?

The St. Petersburg City Council considers on Thursday a new zoning ordinance that would reduce density in some categories. The proposal has been approved by the Environmental Planning and Development Commission. The provisions and effects of the proposal are shown in the accompanying chart. This pro-con package debates the merits of the proposal. The opinion of Times editors is published in the accompanying editorial. Readers are invited to join the discussion by submitting their opinions on the coupon below.

Here's a chance for readers to tell City Council how they feel about the proposed ordinance. Complete the coupon, return it to us, and we'll tabulate and publish the results.

I favor the proposed ordinance cutting density in three zones and eliminating additional residential usage in commercial-parkway and commercial-low density zones.

I favor retention of the present zoning.

My reasons are:---

Name:--------------------

Address:--------------------

Please send your ballot to DENSITY, P.O. Box 1121, St. Petersburg, Florida 33731.

How Proposed Ordinance Would Reduce Density

The following chart compares zoning densities in the present St. Petersburg law with those allowed in the ordinance going before City Council Thursday. Population figures are based on an average occupancy per housing unit of 2.3 persons for the remaining vacant acres in each category. "R" zones are residential, categorized by units allowed per acre. Residential-commercial zones are transitional. Chart information from the Environmental Planning and Development Commission.

The Opinion of Times Editors

HELPLESS CITY?

The Arguments

NO

ler

The Arguments

YES

V. PRE- AND POST TEST (Teacher's Copy)

1. Which of the following are the three means of population change?
 a. birth, immigration, death
 b. birth, death, long life expectancy
*c. migration, birth, death
 d. migration, death, natural change.

2. Which of the following is not a function of population education?

 a. to be able to explain the population change in an area
 b. to find out the number of people in an area
 c. to find out what change in population has taken place in an area
*d. to be able to tell others exactly what will happen in the future

3. You would expect the life expectancy of a Bushman or Tasaday to be
4. a. less than or equal to 20 years old
*b. less than or equal to 40 years old
 c. less than or equal to 60 years old
 d. less than or equal to 80 years old

because a Traditional Society has a high birth rate and a _____ death rate.

*a. high
 b. low

5. Which of the following statements describes a population problem?

*a. The Tasaday tribe of Mindanao has ten men and only five women
 b. The Bushmen move from place to place
 c. Podunk, Michigan has a population of 30,000
 d. both a and c

6. Which of the following is not a characteristic of the populations in Mexico and Peru?

 a. they are both having "population explosions"
 b. they both have high birth rates
 c. they are both in a stage of "change"
*d. they both have low birth rates

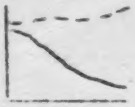
7 Which of the following quotes would be used by a member of a Traditional Society to express his attitude toward family size?

 a. "I am so proud that I have ten sons, the gods have blessed me."
 b. "I am glad I have so many children, because they will take care of me when I'm old."
 c. "I have one son and I hope to adopt one daughter."
*d. a and b

8.9. & 10.

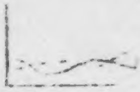
The graph expressing the greatest amount of population growth is

* a.

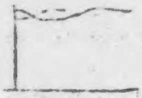


------births
______deaths

b.



c.



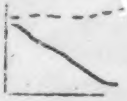
because a Transitional Society has a _______ birth rate and _________ death rate

* a. high
b. low
* c. declining

11. 12.

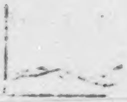
The graph expressing the least amount of population growth is

a.

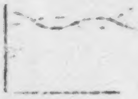


-----births
_____deaths

*b.



c.



because a _____ has a low birth rate and low death rate.

a. Traditional
b. Transitional
* c. Modern

13. 14.
You would expect the population density of India or Ceylon to be

*a. increasing
b. decreasing
c. staying the same
d. both a and c

because a ______ has a high birth rate and decling death rate

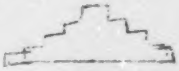
a. Traditional Society
* b. Transitional Society
c. Modern Society

15. Which of the following is the main cause(s) of population increase in Florida in the last 10 years?

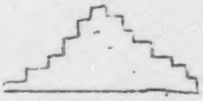
a. high birth rate
b. low death rate
*c. migration of new people into the State
d. both a and c

16. Which of the following population pyramids represents a Modern Society?

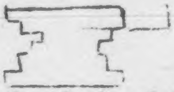
a.



b.

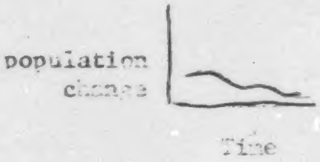


*c.

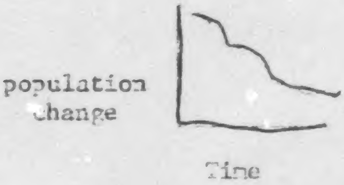


17. Which of the following graphs represents what the world population has done from 500 A.D. until today?

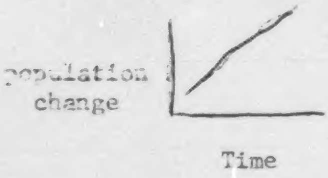
a.



c.



*b.



d. both a and c

18. 19. and 20
You would expect the life expectancy in the U.S.A. or Sweden to be

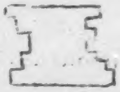
*a. less than or equal to 75 years old
b. less than or equal to 55 years old
c. less than or equal to 35 years old
d. less than or equal to 15 years old

because a Modern Society has a ______ birth rate and ______ death rate.

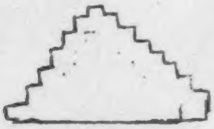
a. high
*b. low
c. declining

21. Which of the following pyramids represents a Traditional Society?

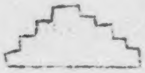
a.



b.



*c.



d. none of the above

Please answer the following questions as honestly as possible. You will not be graded on your answers.

22. I think that people ought to have a family with

a. no children
b. 1 or 2 children
c. 3 or more children
d. as many children as they want and can support

23. I believe that there is a population problem in the world today.

a. Yes
b. No
c. Don't know

24. The United States really doesn't have to worry about the population situation in other countries.

a. Yes
b. No
c. Don't know

25. I feel I should limit the resources I use.

a. Yes
b. No
c. Don't know

SEEING YOUR PLACE:

ENVIRONMENT PERCEPTION

prepared by

Robert M. Peterson

Environmental Education Project
The Florida State University
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Tallahassee, Florida

IV-77

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- B. Seeing and Knowing
- C. Life in an Oasis
- D. The Bedouin
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- F. Seeing and Believing
- G. Seeing and Commitment
- H. Treehouse
- I-J. The School as Environment
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- Pre-Post Test

A NOTE TO TEACHERS

Before teaching this unit, you might want to prepare the following items which are needed but are not provided in this unit.

1. Ditto copies of the white pages in this unit for the students.*

2. Obtain the 2 x 2 color slides and arrange in order (Lessons A.B.D.E)

3. Arrange for the loan of the following films:

   Song of Thy Works. 11 min. color. 16mm. Thomas Craven Film Corporation. Available on loan from The Division of Forestry, Florida Department of Agriculture and Consumer Services, Collins Building, Tallahassee 32304. No rental fee.

   Treehouse. 9 min. color. 16mm. King Films, 1970. Available on loan from The Florida State University Media Center, Tallahassee, Florida 32306. Rental fee $4.50.

   Life in an Oasis (North Africa). 11 min. 16mm. Black and white. Coronet Film, 1962. Available on loan from The Florida State University Media Center, Tallahassee, Florida 32306. Rental fee $2.50.

4. Arrange to have a slide projector and a 16mm film projector.

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*In this unit the yellow pages are designed for the teacher. They present commentary on the activities, objectives and evaluation suggestions, and a few directions. The white pages are for the students and contain readings, case studies, and various activities needed to meet the objectives. Teachers should reproduce these pages for students using ditto masters.

I. RATIONALE

In today's world there are many different societies. Even though all societies may be categorized into one of three basic groups--traditional, transitional, or modern--no two societies are ever exactly alike. Each has its own particular aspects which make it unique. Why are no two societies ever totally alike? Is it because no two physical environments are totally alike? Are there an equal number of societies and physical environments? The theory of environmental determination presupposes the superiority of nature over man and fails because it underestimates the power of man. Man's ability to alter nature is easily recognizable all over the earth. Every building, road, town and boy scout camp atests to the fact that man can mold his own environment. A radical testament to man's power is the modern city built in the Saudi Arabian desert to accommodate the equipment and people needed to extract the oil from deep within the earth. These cities were built in what most certainly would be considered a difficult environment, but nevertheless they were built. If enough capital, technology, and human resources are brought to bear, man can manage his environment. Miami, Florida, would not be the great metropolis that it is today if not for air-conditioning. Where would Amsterdam, Netherlands, be without the technology of land reclaimation? About 15 feet under water, that's where.

So what determines a society's lifestyle? It's not left totally up to the physical environment but it would be naive to say that man was in complete control. Obviously the answer to the question is that it is the interaction between man and his environment that determines his lifestyle. But this still has not completely answered the question for now we need to know what determines how man interacts (or reacts) with his physical environment.

The basic question remains: "Why do we react to the environment, and interact with the environment, the way we do?" Too often as Western man, we tend to evaluate environments and cultures based upon the application of technology and the quality of life judged by material standard of living. This is the bias of our culture. But truly, the more powerful explanation of environment-man interaction is to be found not in technology or in environmental determinism, but in the meaning man has made of his world. That is, man's interaction with the environment is a product of his religious-philosophical commitments in answer to life's existential questions: Who am I? Why do I exist? What created this life? What is life's purpose and the meaning of my/our existence?

These meanings and expectations directly influence our way of seeing the environment as well as our interaction (performance) in it. Thus, it is a group's perception of the environment that directly determines how they will interact with it and out of this interaction emerges a group's lifestyle.

The title of this unit is "perception of the environment" and its general purpose is to supply the student with a better understanding on how people perceive and react to their environment. This understanding, it is hoped, will provide future decision-makers with a basis for making choices.

There are a number of key concepts which need to be defined before one can begin work with this unit.

The first perception is an extremely complex concept. The new International Encyclopedia of the Social Sciences devotes more than fifty pages to a discussion of its meanings. In the simplist terms, social perception is generally concerned with the effects of social and cultural factors on man's cognitive structuring of his physical and social environment. Perception then depends on more than the stimulus present and the capabilities of the sense organs. It also varies with the individual's past history and present "set" or attitude acting through values, needs, memories, moods, social circumstances, and expectations. The major problem in studying people's perception is that of measurement, since people often have difficulty articulating the conscious or unconscious feelings, attitudes, or ideas associated with perception. In many cases, perception must be inferred from behavior or otherwise sought in indirect ways.

For example, the Marsh Arabs of the Tibrus-Euphrates River Basin (the subject of one of the unit's lessons) are a very traditional people and are not co-operating with government efforts to improve the marsh environment by filling in the swamps (land reclamation). The government believes that in an improved environment the Marsh Arabs could more easily obtain and maintain the three basic necessities for human existence: food, water, and shelter. With these necessities more easily obtained then the Marsh Arabs would be free to make further technological changes that could substantially improve their quality of life as defined by the government. But the Marsh Arabs do not see things this way. They apparently perceive their environment as an essential factor in the meaning of their lives.

Environment is another important concept. Webster defines it as "the aggregate of all the external conditions and influences affecting the life and development of an organism."

Environment includes the resources of and area of land. Included in this is the amount of arable land, animal, vegetable and mineral resources plus the renewable and non-renewable energy resources.

The physical layout of the land is part of environment. Some areas are mountainous, other areas swampy, others desert like, etc. Implicit in all cases is that these environmental elements have a certain utility based on a realistic appraisal of a nation's or area's technological capacity; in other words, we are dealing here with an objective operational environment whose evaluation is based on an ability to utilize or exploit a given population, set of resources, and space to group advantage.

For our purpose we are going to enlarge Webster's definition of environment to include what might be called the psychological environment. This is an internalized environment and is simply the values, attitudes, norms. and frame of reference of a group of people. This psychological environment is obviously more subjective and difficult to determine than is the physical environment.

To reiterate the physical and psychological environment are the two determinates of a group's perception (or frame of reference) and out of a group's unique perception develops their lifestyle.

Below are definitions of other key concepts included in this unit taken from Webster's Seventh New Collegiate Dictionary:

technology: the totality of the means employed to provide objects necessary for human sustenance and comfort

frame of reference: a system of beliefs or set (as of facts or ideas) serving to orient or give particular meaning

values: something intrinsically valuable or desirable

resources: a new or a reserve source of supply or support

lifestyle: the pattern of existance that develops out of man-nature interaction, and depends upon the meaning individuals and groups make of life and the commitments for which they live their lives

This unit is organized around a few simple generalizations dealing with the concepts perception and technology. There has been a deliberate attempt to keep the number of concepts and generalizations for a minimum. This is justified on the grounds that environmental perception is a new area of study and, therefore, this unit is more or less an introduction into the field.

Why should students study environmental perception?

The most basic answer to this question is that it will help them to understand why people live as they do. We are attempting to develop in the student a feeling for other people, in other words, empathy is our goal. By empathy we mean the ability to put one's self in the other's shoes (to see as they see). When an Indian looks at a mountain he sees not just a mass of rock but a world of the supernatural. Can we get the student to invision the spirits of the mountain; can we put him in the head of the Indian? When a Taoist looks at a brook he sees the unity of nature and the universe. Can we see it too?

By seeing the world through the eyes of others we not only come to understand them better, but also ourself. Empathy and self-awareness are brothers and by developing both we begin to discover some answers to why man is as he is, and to why he acts as he does in the environment.

II GENERAL UNIT OBJECTIVES

1. Each student will be able to state definitions for the following concepts: environment, perception, technology, frame of reference, values, and commitment. In addition, students will be able to list three examples and three non-examples of each concept.

2. Given slides and narrative materials, students will be able to identify goals men pursue in physical environments and how such pursuits lead them to alter their environments. (Man makes his "space").

3. Given these materials, students will state ways in which human performance may mold the physical environment, and how human commitments (religious-philosophical belief systems) mold man's perceptual environment and his lifestyles. (As man sees himself, so he acts toward others and toward his environment.)

4. Given the materials and activities in this unit, students will demonstrate an awareness of perceptual factors in human environmental action by their interpretations of a variety of such human performances.

5. Given these materials, students will identify the linkage among man's natural environment, cultural environment, and perceptual environment.

6. Given these materials and class discussion, students will develop inquiry skills involving:
    - comparison and contrasting
    - drawing inferences
    - perceiving relationships
    - generalizing
    - taking a position and offering justification

7. Given the materials in this unit, students will be able to answer the question "Why do we act to our environment, the way we do?" by drawing upon reasons involving human commitment and perception.

8. Given specific case studies, students will reflect empathy for another by responding as he might in a given situation and state reasons for such a response or perception in terms of the other's frame of reference or commitment.

9. Given the materials in this unit, students will demonstrate greater self-awareness by offering reasons for environmental acts based upon their own motives, perceptions, frame of reference and/or commitments.

LESSON A. LOOKING AND SEEING

Objective:

Given a series of slides depicting deliberate modifications of the environment by man the students will state orally the following: (1) man can change his environment, (2) man is able to change his environment by applied technology. The students will also demonstrate understanding of the concept of technology by listing examples and non-examples on the board.

Materials:

Slide projector and slides of Everglades, Arabian Desert and Zuider Zee.

Strategy:

Show first TWO slides of Everglades (the students should not be told what the slides are of)

1. Ask students what they see
2. Ask what type of people might inhabit this type of environment and what their lifestyle might be. (What housing might be like? How might these people obtain food? Transportation? etc.)

Show slides of Indian village and Indian life.

1. Ask students if this is what they expected to see. Why?
2. Ask how the environment has affected the lifestyle of these Indians. (Is their lifestyle determined by this swampy environment? Does the environment control these people? Why?)

Show slides of Miami.

1. Tell students that this culture also exists in this swampy environment.
2. Go on to next slides (answer no questions at this point)

Repeat steps with Arabian Desert, nomads, and ARAMCO slides.

Now show slide of Zuider Zee.

1. Teacher says to students - "Even though we would not expect to see man living in the middle of the ocean how might we expect man to interact (or use) with this type of environment?"

   (Student response should have something to do with boats and fishing)

Show slide of fishing boat

1. Ask if this is what was expected.

Show slide of farm

1. Tell student that this farm is located in the same place as the two previous slides.

Show slide of building in Hague, Netherlands.

1. Tell students that this area was also once under water.

Now go back to first slide of Everglades and run through the slides one by one and tell the students what and where each of these places are.

Slides 1,2 - Everglades of South Florida
3,4 - Seminole Indians of South Florida
5 - Miami - once part of Everglades
6 - Arabian Desert (point out on map)
7 - Bedouin nomads in Arabian Desert
8 - ARAMCO (Arabian Oil Co.) city, built to house the people who work in the oil fields.
9 - Zuider Zee
10 - Dutch fishermen in Zuider Zee
11 - Dutch farm built after sea was drained
12 - Hague, Netherlands

Ask students to recall earlier comments that the environments were controlling the lives of the inhabitants (the Seminoles, Bedouins, and Dutch fishermen).

1. Ask if the people in Miami, the ARAMCO city, the Dutch farm and the Hague were also controlled by the environment. (Student response is "No")
2. Teacher. "So in other words they were controlling their environment, is this true?" (Let students reflect for a few minutes).
3. Have a student write on board "Man can control his environment."
4. Teacher asks students how man was able to do this. (As students reflect the teacher should introduce the concept of technology, if not brought up by students.)
5. Ask for definition of technology and write on board when acceptable one is arrived at. (Webster defines technology as applied industrial science but students should arrive at own.)
6. After definition is written on board now ask students to list on the board examples and non-examples of technology.

LESSON B. SEEING AND KNOWING

Objective:

Given a role playing exercise the students will be able to define what frame of reference is and how it is developed.

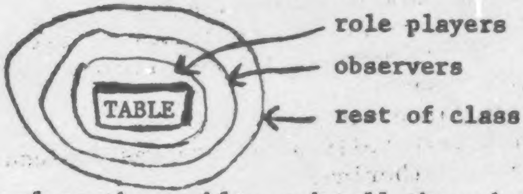
Materials:

1. Role instruction sheets and role briefing sheets for role players.

Strategy:

Seating

Role players are seated in the center with all other participants seated around the role players. A table in the center of the role players is optional. Role player observers will be seated around the role players and will be arranged so that they are sitting directly across from the role player they are observing. The rest of the class should be seated around the outside of the observers.



Now read to class the problem and tell them what the role playing involves (see problem sheet).

Process:

I. Preliminaries: The facilitator chooses five people as role players and distributes role briefing sheets, role instruction sheets and problem sheets to them. These five people are taken to an area outside the hearing range of the remaining group of participants and are given five minutes to study their roles and problems. The facilitator warns the role players not to reveal their roles to anyone, including the other role players.

While the roles are being studied, the facilitator chooses five more participants to be observers of role players. Each observer will be assigned to observe a specific role player.

The role player observes and the group process observers are seated as suggested in Physical Setting.

II. After five minutes, the role players enter, take their places in the center of the participants, and are asked by the facilitator to introduce themselves in their new roles. They are told that the other participants are observers. The group of role players begins the meeting under the chairmanship of Marvin Turner.

III. After fifteen minutes the role playing is terminated, whether the group has completed the agenda or not.

IV. The role player observers are asked to report their observations on the point of view of the person observed.

V. The facilitator asks the role players to read their roles and background to the class.

Questions to class after role playing:

1. Can someone tell me what a point-of-view is?

2. What determines what a person's point-of-view is?

3. Does a person's background or previous experiences have any influence on a person's point-of-view? Why?

4. What can we call all of the factors such as previous experiences that determine a person's point-of-view? (If class does not come up with frame-of-reference, tell them)

5. Now have class define frame-of-reference on board.

6. How did frame-of-reference influence the positions that each person took during the meeting? (1) Marvin Turner (the store owner); (2) Carol Stone (social worker); (3) Roberta Stevens (ghetto mother); (4) Louis Maber (dentist); (5) Jack Simon (V.P. on Chamber of Commerce).

Teacher - "Now we are going to leave the role playing exercise but we will still work on the concept frame-of-reference"

Ask class these questions -

1. How would a person who lived his entire life in the city view and react to life in the country?

2. How would a person who lived his entire life in the country view and react to life in the city?

3. How might an Indian view the Indian take-over of Wounded Knee?

4. How might a member of the VFW see the Vietnam War?

PROBLEM SHEET

Problem for role players to solve:

The City of Kennerville has recently had a riot in the downtown area of the black district. These five people have been asked by the mayor to discuss what can be done to keep this from happening again and to make recommendations for public policy.

Role Players:

1. Marvin Turner - white, local grocery store owner in heart of riot area. Marvin does not live in ghetto. He believes black people can't be trusted, are ignorant, lazy and lack morals. He thinks the only way to keep riots from reoccurring is to increase the number of white police in the ghetto to ensure the safety of his store and quickly arrest any "trouble-makers."

   Marvin's background - born in relatively poor white family. Through hard work he was able to operate successfully a small grocery store. He has always had trouble with very small black kids stealing his food. (That's why his prices are so high). Until black people took over the neighborhood his store is in, he never had much contact with them.

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2. Carol Stone - white social worker. Believes only way to insure no more riots is to gain trust of black people through community relations programs with police and local store owners and city programs to find good jobs for blacks.

   Carol's background - born into a liberal middle class family. Mother was social worker and Carol used to go on cases with her as a young girl. Carol, while working for VISTA, lived in a ghetto for a year and has now been a social worker for four years.

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3. Roberta Stevens - black mother of five children. She feels that the only way to insure no more riots is to find jobs for black youths, lower rents and store prices (higher in ghetto than rest of city). She believes the fault for riot lies with the police (harassment) and lack of jobs (people with nothing to do).

   Roberta's background - 35 years old and lived in ghettoes her entire life.

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4. Louis Maber - white dentist, he believes that the best thing to do is nothing. Leave things as they are. He does not want any city programs to be undertaken to solve problems because this might increase his taxes. When forced to take a stand he sides with Marvin Turner and believes the basic cause for the riots was "black trouble makers".

   Louis's background - upper middle class white family, never been around black people, has no black patients and the only reason he was picked for panel was that he was the mayor's brother-in-law.

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5. Jack Simon - Vice President of Chamber of Commerce. 50 years old. Jack is not really concerned with the work of the panel. He got on the panel for only one reason - to meet Carol Stone and ask her for a date. For this reason he strongly agrees with anything she says. His behavior is guided by a desire to impress Carol Stone.

   Jack's background - white, middle class. Never dated much in school, is not married, and is very lonely.

Instruction for role players -

for each role player

1. Participants should not look at eachother's roles.
2. Each person should read his part carefully and play his role conscientiously.
3. Put yourself in the role you are given.
4. Participants should not overact.
5. Be natural, but emphasize behavior aimed at fulfilling your role.

LESSON C. "LIFE IN AN OASIS"

Objective:

For students to understand that man can, if he is willing, change his environment and that this change comes through applied technology.

Materials:

Film - "Life in an Oasis"

Strategy: (Directed Discussions):

1. Ask students "What are the most important things people need to maintain life?" (water, food, shelter)
2. "Can you think of any environments in which these three things are difficult to obtain and maintain?" (desert)
3. Why? (little rain, no fertile soil, few resources to draw upon for construction purposes).
4. "Can anyone tell me what an oasis is?"
5. "How important is an oasis to people living in a desert?" "Why?"
6. "When an oasis drys up what do you think the people do?" (go look for a new one)
7. "Is there anything else they can do?" (Two possible answers (1) No; (2) build a new one)
8. "Now as we watch this film, I want you to think about how these people living in the Sahara Desert in North Africa went about solving the problem of obtaining and maintaining the 3 basic needs for human life (1) water, (2) food, and (3) shelter.

Now show film (11 minutes)

Questions after film -

1. "Do you think the desert is an easy place to live?" "Why?"
2. "Do you think the people of the desert perceived it as a difficult place to live?" "Why?" (examples from film)
3. Before an environment can be changed, what attitude must the people exhibit? (desire to change it).
4. Once people have decided to change their environment what then is needed? (ability to change it - technology!) - if students don't come up with answer use analogy on a personal basis - example, "If I decide to become a great baseball player, does this mean I'm going to do it?" (No, I might not have the ability).

5. What are some of the ways these people alterned their environment?

6. What can we conclude? (with enough technology and a desire to use it man can change his environment)

If time is left contrast these peoples attitude towards change with the Bedouin and Marsh Arabs.

LESSON D. The Bedouin

Objective:

Given a generalization showing the relationship between a group's perception of an environment and the way that they react to that environment and given a case study, the student will apply the generalization to orally analyze the lifestyle of the Bedouin.

Materials:

Slide projector and slides of Bedouin and reading on Bedouin.

Strategy:

1. Write definition of value on board and give class a few examples of American values.

2. Write generalizations on board, "A group's perception of their environment determines how they will react to it."

3. Hand out case study on the Bedouin for students to read silently.

4. Show slides and relate to reading.

5. Questions for guided discussion.

-Why is this a difficult environment to live in? (hot, dry, not fertile, etc.)

-What are some of the problems faced by the Bedouin? (difficult to find food, water, etc.)

-What things does the reading say the Bedouin value? (freedom and manhood)

-How do the Bedouin define freedom? (in terms of space)

-How do the Bedouin define manhood? (in terms of freedom)

-In terms of what they value, does the Arabian Desert satisfy the Bedouin? Why? (Yes, because it affords them the space they need to feel free)

-How do you think the Bedouin view the people who live in towns year around? (possibly as inferior because they see them as not free and therefore lacking manhood)

-How do you think the Bedouin would react to being forced to settle down?

The Bedouin and Technology

-Do they appear to have a high degree of technology?

-Do you think the Bedouin are in control of their environment?

-What evidence is there that they are not in control of their environment? (have to move around, etc.)

-Can an environment as harsh as the desert be controlled? (Yes, refer back to ARAMCO city)

-How has the automobile influenced the life of the Bedouin?

Question for speculation

-Do you think the Bedouin are happy? (play devil's advocate with students)

The Desert Nomads

The Bedouin are Arabian Nomads who live in the huge desert which covers most of Saudi Arabia.

The Arabian Desert is said to be the largest continuous body of sand in the world (about the size of Texas). The average annual rainfall in the desert is 3 inches. There are no lakes or rivers on the surface of the land, but artesian reservoirs are sometimes found under the surface. Natural vegetation is sparse except in scattered oases. There are no forests.

For centuries the Bedouin have roamed over this vast area seeking water and forage for their herds of camels, their most prized possession. They also raise goats and sheep. The irregularity of rainfall keeps the Bedouin in a constant state of instability, for what was a good camping place last month may be unable to support life this month.

The camel is very important to these people. With camels they can ride from well to well and from pasture to pasture. They can drink camel's milk and at times eat meat. They also use the camels for trade with merchants in towns to get the items they need. They exchange the camels for grain, clothing, arms, saddles, and other necessities of life. During the dry summer months they settle near a village on the outskirts of the desert to carry on the trading.

The council of elders (men chosen for their intelligence, courage and humanitarianism) decides when it is time to move. Household equipment and the tents (made of goat hair) are rolled into woollen sacks and loaded on camels by the women. The new camp side is also chosen by the council of elders.

The man is the master of the Bedouin family. Married couples make their homes with the husband's parents. A man's business is to defend home and property and to take his herds to find grass. A woman's business is to do housework, weave and obey her husband.

The Bedouin are a very traditional and superstitious people. The attitude of the nomad to illness and disease is a fatalistic one - "Death and life are in the hands of God".

The Bedouin value freedom very much. To these people freedom lies in space, that is, they feel that they need a large area to move around in or else they are not truly free. And according to the Bedouin, if a man is not free, then he is not a man and to them manhood is very important.

In recent years efforts have been made by the governmental agencies of Saudi Arabia to bring about a settling of the nomadic Bedouin. But the Bedouin are opposing these efforts because they fear it will destroy their traditional lifestyles. Recently long droughts have caused severe hardships and forces some to take advantage of government offers to help them settle. But the settling of 179,000 nomads is an enormous task and is hampered by the independence of the nomads themselves.

If it should be that these nomads are eventually settled, a proud and dignified way of life will pass into history. For it is true that the nomad, in his isolated existence, is the height of the finest Arab qualities. His individualism, generosity, proud bearing and courage mark him from those who are settled, whom, at least in his eyes, these qualities have diminished under the pressures of the modern world.

The Bedouin lifestyle and the influence of the automobile -

While the camel made the desert habitable, another possession has brought with it the end of the nomadic life. That is the automobile. Armed men in American cars can shoot down warriors on horse and camel, and thus people from the settled countries can compete politically with those on the desert. Furthermore, trucks carry goods, in Egypt and Iraq, once borne by Arabian camels. The bottom has fallen out of the camel market. Ibn Squd has pacified the nomads in his domain, and has spent large amounts of the money he has taken from the pilgrimage, oil concessions and other revenues on irrigation projects, using artesian water. Some of the nomads have settled down. The life depicted by Musil was a going concern at the beginning of this century, and even to the time of World War I, but now it is passing into history.

LESSON E. THE MARSH ARABS

Objectives:

Given a case study and slide presentation on the Marsh Arabs, the students will describe the influence that the marsh environment and the values of the Marsh Arabs have on their perception of the environment.

Given a case study and slide presentation on the Marsh Arabs, the students will describe what relationship exists between happiness and lifestyle change and add any needed qualifiers.

Materials:

Slide projector and slides on Marsh Arabs and reading on Marsh Arabs.

Strategy:

1. Handout case study for silent reading by students.

2. Show slides - relate to reading.

3. Questions for guided discussion

   -Does this appear to be a difficult environment to live in? Why? Contrast to desert environment in terms of resources and difficulties faced.

   -What are some of the problems the Marsh Arabs face?

   -Do they appear to have a high level of technology? On what do you base your answer?

   -Are the Marsh people in control of or controlled by the marsh environment? Explain your answer.

   -What does the reading say the Marsh people value? (i.e., privacy).

   -How does this influence their perception of the marshes? (i.e., to them the marshes are good because it affords them the privacy and security they value. They are satisfied).

4. Questions on the happiness-lifestyle change relationship and qualifiers.

   -What do you think, are the Marsh Arabs happy? Why?

   -What do we mean when we say they are a happy people? (i.e., well adapted, content, pleased, gratified).

   -What does the government of Iraq want to do to the marshes? (i.e., fill in the marshes so they can politically control the Marsh Arabs).

-If the marshes are filled in and a new environment created what will this do to the lifestyle of the inhabitants? (i.e., change it, they will lack privacy, values will be frustrated).

-Do you think the Marsh people will remain happy if the marshes are filled in? (i.e., No). Why? (i.e., traditional people, not accustomed to change. Values will be frustrated).

-Should the government fill in the marshes? Why or why not? (i.e., probe student responses).

-So what relationship exists between happiness and changing a people's way of living? (i.e., If a people are happy, then their lifestyle should be left alone).

-Is this relationship acceptable to everyone? Does anyone have anything to wish to add to it? (If no one has anything to add then add the following - The Nazis were happy exterminating Jews).

-With this in mind does anyone wish to add a qualifier to our happiness-lifestyle change relationship? (i.e., If a group of people are happy and their lifestyle is harming no one, then they should be left alone).

If time is left -

1. Divide class in half.
2. Have one group draw a picture of environment as a Bedouin child would draw it and the other half as a Marsh Arab child would draw it. Ask students to explain their pictures.

LESSON F. SEEING AND BELIEVING

Objective:

Given the Black Elk reading and the prayers of the Kwakiutl Indians, the student will contrast and be able to write in his own words the Indian's perception of nature to the perception of the majority of people in contemporary America.

Materials:

Black Elk and Kwakiutl Indian readings - handout.

Strategy:

1. Handout readings.

2. Tell students - "Today we are going to examine the Indians' view of nature. We are going to try and discover how they view nature by investigating the Indian readings that I've handed out to you. Then we are going to try and contrast their view of nature to the view of contemporary America."

3. Have student read introduction for Black Elk.

4. Have students silently read over questions so they can be thinking about them during reading.

5. Read Black Elk -

   Note: These readings, along with the Kwakiutl prayers, are fairly difficult to read, so it may be best if the teacher and the better oral readers do a dramatic reading as the rest of the class follows along.

6. Discuss questions on Black Elk.

7. Repeat steps with Kwakiutl prayers.

   Note: Question 3 is the key question and should be thoroughly discussed. Students should be made aware that they are going to see a variation of this question in a test situation.

8. If time remains - "If contemporary America adopted the Indian view of nature how might this affect some of the ecological problems we face today?

INDIAN'S VIEW OF THE WORLD

For the Plains Indian, as for the California Indian, man did not dominate or destroy his environment, he existed within it, and saw it as sacred. Perhaps the vastness of the plains, with the seemingly endless herds of bison and antelope, contributed to the humility and religious power of tribes like the Cheyenne and the Sioux. Black Elk, who is speaking in this account, was a medicine man of the Ogalala Sioux, who lived from the 1850's, when the Sioux were the lords of the Northern Plains, to the 1930's, when their world had shrunk to reservation-size. He is preparing to tell his life story, and making the necessary religious ceremonies for such an occasion.*

Questions

1. In Black Elk's worldview, what is the place of men within the world? What is the place of other living creatures?

2. What is the symbolic importance of the pipe in this account? What does it reveal about attitude toward the ecosystem?

3. Do Black Elk's gods exert much control over him? Why or why not?

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*Reprinted from Black Elk, Black Elk Speaks (New York: William Morrow and Company, 1932), pp. 2-3, 5-6. (As told by John G. Neihardt).

KWAKIUTL INDIAN PRAYERS

On the southeastern coast of Alaska and in northwestern British Columbia lived the most highly developed, wealthiest and perhaps most interesting Pacific Coast Indian tribe, the Kwakiutls. Since modern technology did not heavily invade this area until the twentieth century, they have been the subjects of many studies by anthropologists. One of the products of that research was a study of Kwakiutl religious life, from which the following prayers are drawn.*

*Reprinted from Frank Boas, The Religion of the Kwakiutl Indians, (New York: Columbia University Press, 1930), pp. 184, 192, 201, 203.

Questions

1. What can you learn about the life styles of these Indians from their religious attitudes? What elements of nature were important to them? Why?

2. What is the Kwakiutl view of nature and natural beings? How does it relate to their view of men, and of God or Gods?

3. What are some of the crucial differences between this view of nature and the view of most people in contemporary America.

Prayer of a Man who found a dead Killer Whale

LESSON G. SEEING AND COMMITMENT

Objective:

Given the film "Song of Thy Works" and the reading from the essay "The Place of Nature" both of which describe or project a specific man-nature relationship, the student will demonstrate understanding by (1) identifying the two views; (2) explaining how each has affected our perception of our geographical environment; (3) given examples to support number 2; (4) contrast the two views by projecting into the future the logical consequences for the Western World if one of the views remains or becomes dominate (accepted by majority) over the other. Given this and the preceding lessons, students will show in their discussion that they see connections between a person's commitments (belief system) and his perception of the environment and his interaction with that environment.

Materials:

16 mm film projector

film "Song of Thy Works"

handout - excerpt from "The Place of Nature"

essay (for students)

Strategy:

1. Tell students "Today we are going to see a film dealing with the man-nature relationship.
2. Show film (11 minutes)
3. Questions:
    1. What is the place of man in the natural order according to this film?
    2. Does man have any responsibility for nature? If so, what?
    3. How does a scientist look at the natural world? How does a poet or a religious mystic view it? (frame-of-reference).
    4. If you accept the point of view of this film,how does it affect your attitude towards nature? towards you own life?
4. Hand out "The Place of Nature" reading and have students read silently.
5. Questions
    1. How does this reading show the man-nature relationship?

2. If this viewpoint is accepted by a majority of people how do you think it affects our (meaning country as whole) perception of nature? (because we are superior we can use it in any means we see fit).

3. Give me some examples of how man has treated nature that reflect this point of view? (destroying forests, rivers, lakes, general pollution, over-hunting certain animal species, etc.).

4. Are there any examples in contemporary America that reflect the point of view expressed in the film? (National Parks and forests).

5. Which one of these two views of the man-nature relationship is the more accepted in America today? (man is superior and can use nature as he sees fit; man has a responsibility to nature).

6. If we continue to perceive our geographical environment in this way, how might America look 100 years from now? How will this affect our lives?

7. If the point of view expressed by the film, that is, man has a responsibility for nature, is accepted by the majority of Americans, how might this change the future?

The Place of Nature*

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*Reprinted from Ian McHarg, The Place of Nature in the City of Man.

LESSON H: TREEHOUSE

Objective:

Given the film "Treehouse" and two ethics cases describing conflict situations involving technology and nature, the student will select the position he feels is most important and state at least one supporting argument for his position. The supporting argument should logically relate to the information given.

Materials:

16 mm film projector

film "Treehouse" (11 minutes)

ethics cases handout

Note: Treehouse is a brief provocateur, an open-ended film about a boy's sudden awareness that someone must speak for nature, for a tree, in the face of technological progress. As the film opens, we see a young boy, perhaps eleven years old, walking through a field of grass and flowers. Along the way, he stops to collect a caterpillar, and to swing from a rope hanging from a tree. When he arrives at his special tree, he climbs a rope ladder to a platform treehouse, removes a favorite comic book from a box, and begins reading amid the quiet summer morning. Suddenly a bulldozer begins working below him, plowing up the field for a housing development. The boy watches the machine mow down a small tree near his perch, and soon finds the bulldozer stopping right in front of his special tree. The operator calls the boy down, and offers him part of his lunch. The boy, Mike, is momentarily fascinated by the big machine, and sits in the driver's seat imagining he is the operator. But when the operator finishes lunch and orders Mike home, the boy makes a decision--he runs back to the rope ladder and climbs back up his tree. Without a word, he indicates his determination to stay until the bulldozer moves on. The film ends with an aerial view of the tree and field, and an ugly housing development across the road.

This film is basically an ethics case involving the conflict between two views of nature, and two sets of human needs.

Strategy:

1. Tell students "We are going to see a film about technology and nature. As we look at the film, I want you to keep these concepts in mind."

2. Show film.

3. Ask questions:

    1. What did the bulldozer represent? (advancing technology).

2. What did the tree represent? (nature)

3. So what are the two conflicting values? (technology and nature)

4. Look at the environment from the viewpoint of an eleven-year old boy. What do you feel?

5. Have you ever collected a butterfly or a caterpillar? Why do boys do that sort of thing? Why did you do it?

6. What does a treehouse mean to the boy? What does he use it for? Is this a valid use for a tree? More valid than what the housing developers want it for? Why?

7. At what point is Mike most tempted by the magic of modern technology? At what point does he make his decision to stay with the tree? Why do you think he made the choice he did?

4. Tell students "Now I want you students to make a choice, just as Mike had to make a choice."

5. Handout ethics case, students work on own.

Below are two case studies dealing with the conflict between technology and nature. Read both carefully and answer the questions following each. Remember, answer how you truly feel and be sure and justify your position.

Case #1

The leaders of Sanalem are concerned. Their nation, which achieved independence only four years ago, is located along the broad belt of tropics in subSahara Africa. Sanalem, like its nearest neighbors, is troubled by overpopulation, inadequate crop yields, poverty and disease. The most severe disease in Sanalem is malaria, spread by the Anopheles mosquito. The leaders on the national council are well aware that malaria can be controlled cheaply and quickly by heavy applications of DDT to the soil. Two years ago, they began testing DDT in their experimental fields. They found that crops yielded greater quantities, mosquitos generally died off, and malaria cases declined by 60% where DDT was applied. More recently, however, tests report the fishing harvest in nearby rivers has sharply declined, birds are dying, and DDT is being found in milk in alarming quantities. The leaders gather to try to decide whether or not DDT is worth the price they are paying.

How do you feel about this problem?

What do you think you would do in this situation? Give one supporting argument for your position. (Be sure it relates to the information given).

Case #2

The Everglades

The Everglades, located in South Florida, is one of America's most beautiful areas and the country's only subtropical national park. The park has become a refuge (place of safety) for 22 endangered species, including the bald eagle, osprey, panther, and alligator.

The Jetport

Miami International Airport is one of the country's largest and most conjested airports. In recent years so many planes have been using it that all of the panes can no longer be accommodated. Fearing that the overload of planes will inhibit safety, five airlines undertook the job of financing the construction of a new airport just north of the Everglades. The new airport would be used to accommodate jets on training flights and thus lessen the conjestion at the older airport.

The Problem

Conservationists fear the effects of jet noise, exhaust fallout, fuel, and oil spills, and the sewage from buildings constructed around the jetport will destroy the Everglades and all of the animal life that goes with it.

Airline people fear that if something isn't done soon that safety standards at the Miami Airport will deteriorate and endanger the lives of passengers. The Miami airport cannot be expanded in size because the city entirely surrounds it.

Alternate jetport sites have been looked into but none are acceptable because they are too close to the city (the people don't want the added noise and pollution) and too close to the old airport (air traffic would be too thick).

What do you think about this, should the jetport be built? Why or why not? Give at least one supporting argument for your position. (Be sure your supporting argument logically relates to the information given).

LESSON I AND J. THE SCHOOL AS ENVIRONMENT

Objectives:

Given a tour of the school the student will demonstrate awareness of his environment by listing at least 20 places, items and objects in and around the school (Part 1).

Given a tour of the school the student will be able to demonstrate sensitivity for their environment by writing in their own words at least three American values that can be inferred through observation of their school environment (Part 2).

Given the three values inferred by each individual, the student will be able to demonstrate an understanding of environmental perception by explaining in writing how he arrived at the values (Part 3).

Given the conditions for various levels of technology the student will demonstrate in writing the relationship between increased technology and man's ability to alter his environment and then (as a class) will verbalize a generalization to explain that relationship (Part 4).

Materials:

Handout with conditions for various levels of technology.

Strategy:

Part 1

1. Take students on tour of school (bring paper and pencil).
2. Have them list as many places, objects and items in and around the school as they observe (minimum of 20).
3. Have them write down any personal perceptions they may have for some of the things listed. Examples - seems important, unimportant, etc.).

Part 2

1. Once back in classroom allow students approximately ten minutes to list at least three American values that can be inferred through their observations of the school environment. (Examples - flag reflects patriotism, teachers' lounge may reflect privacy, entire school reflects education, physical education department reflects physical fitness, landscaping reflects natural beauty, etc.).

   Note: teacher may have to review definition of a value.

2. Ask three students for one of their inferred values and have the student describe to the rest of the class how he decided that the value was reflected by the school environment.

Part 3

1. Now have the rest of the class do the same except in writing. The three values discussed in class cannot be used.

Part 4

1. Distribute handout, allow class as much time as needed for all to complete.

2. Have various students respond orally to the questions on handout.

3. Ask students after each question is discussed if the condition represented a low, medium, or high degree of technology. (Condition A - low degree; B-medium degree; C - high degree).

4. Ask students at what degree of technology were you able to change the school the most, the least? (Could make more changes at high degree of technology, fewest changes at low degree).

5. What relationship exists between increased levels of technology and our ability to control or alter our environment? (The greater a group's technology the more control they have over their environment).

6. Have students write generalization on papers, now collect.

7. If time remains have students respond orally and teacher list on board as many American values that the students were able to infer from the school environment. Discuss how each was arrived at.

8. Teacher may add some the students may have over-looked.

You have been given the job of changing the school any way you wish to. You may want to make changes with the actual physical building, or some of the rooms, perhaps the landscaping, or maybe there is something you wish to add or remove from the school. Be sure to follow each condition carefully.

Condition A

You can change the school in any way you wish but you can use only those resources in our classroom. (The 30 students and any tools in class).

Condition B

You can change the school in any way you wish but you can use only those resources in our classroom plus those you have at your home.

Condition C

Now you can use anything you need to change the school. (Unlimited resources).

LESSON K. PERCEPTION AND TECHNOLOGY

Part I (25 minutes)

Objective:

Given a list of major technological advancements, the student will be able to list at least three effects (positive or negative) each had on American life. Then, each student will specify at least one set of criteria for making his positive or negative judgment.

Materials:

Paper

Strategy:

Teacher says, "For the last couple of weeks we have been studying how people perceive their environment and how technology can change environments. Today, we are going to hold a general class discussion on how certain technological advancements have affected and changed American life."

1. Have students take out paper and give them ten minutes to list all the positive and negative effects that the automobile and television have had on American life.

2. Now have students volunteer answers.

3. Ask questions to develop understanding.

AUTOMOBILE

What was used for local transportation before cars? (horses). How did this limit people? (difficult to travel long distances, had to live near work, etc.). How do you think people first perceived the car when it was invented around 1903? (a plaything for rich, not a big deal). But once people saw the usefulness of the automobile, how did it change American lives? (no longer need to live near place of work - move to suburbs, cities expand; people travel more and move more often). The car makes it easy for people to travel and see new places and meet different types of people, what effect might this have on Americans? What negative effects has the automobile had on the country? (highway deaths, pollution of air). Any other positive or negative effects that the automobile has had on the country?

TELEVISION

1. Have students volunteer answers.

2. Questions - if students don't bring it up be sure and discuss the effect T.V. has had on politics, entertainment, education.

In doing these positive and negative evaluations, the teacher should call for the students' criteria (values) for making such judgments-- probing student responses to get at their commitments and lifestyle values.

Part II (25 minutes)

Objective:

Given various role playing exercises, the student will demonstrate understanding of how others perceive their environment by successfully portraying their given roles. Other students will demonstrate understanding in ensuing class discussion.

Materials:

None.

Strategy:

1. Arrange chairs in semi-circle for greater intimacy during role playing.
2. Remind students to play their given role seriously and realistically.
3. Choose students for role playing and read situation to class.
4. Situation 1

The city of Lancing is thinking about tearing down the inner city slums and re-locating the residents for the purpose of building a football stadium. The following three people meet and discuss the situation.

Mr. Baker - member of Lancing Chamber of Commerce, wants stadium built.

Tom - 15 year old boy. Has lived entire life in slum, and wants to stay.

Mr. Johnson - local black leader.

5. After role playing discuss how each person's different perceptions of the slums was influenced by each's frame-of-reference. Example - How did Tom view the slum? (as his home) Why? (lived entire life there). How did Mr. Baker view the slum? Why? etc. What did the slum represent to Mr. Johnson? (his friends, people, area in which he had prestige, etc.).

Situation 2

There is a severe water shortage in Northern Arizona and some of the people want to make a reservoir out of part of the Grand Canyon. Dialogue is between:

Mr. Field - a conservationist

Mr. Cash - a Congressman who senses that the people want the reservoir and is looking for votes.

Continue with perception and frame-of-reference questions.

Situation 3

Date 1865

Place - somewhere in the West

Oil has been discovered on Indian land, the federal government decides to relocate the tribe. A representative of the government has come to tell the tribe that they must move.

Mr. Oyler - representative of Federal Government

Chief Thunderbottom

Questions for Perception Unit

Knowledge and Skill Questions

There is only one correct anser to each question.

1. The ARAMCO city, built to house the people who work in the Arabian Desert oil fields, is a good example of

    a. Arabian architecture
    b. land reclaimation
    c. a Bedouin city
    d. applied technology

2. What is the key determinant in a person's perception of his environment?

    a. his frame-of-reference
    b. the geography of the environment
    c. the length of time he has lived in his environment
    d. none of the above

3. Two things are necessary before an environment can be altered: one is the ability to do it, the other is...

    a. the money to do it
    b. the desire to do it
    c. a building permit
    d. the technology to do it

4. The most important things people need to live are

    a. food, water, and shelter
    b. money and friends
    c. a good President and missiles to protect yourself and your country
    d. all of the above

5. What determines how a group reacts or interacts with their environment?

    a. the amount of technology the people have
    b. their perception of the environment
    c. the environment
    d. the leader of the group

6. The reason that the Bedouin nomads refuse to settle down is

    a. they like to travel
    b. they have no place to settle
    c. they believe it would mean the end of their freedom
    d. they make too much money as nomads to settle down

7. According to our generalization on the Marsh Arabs, "If a group of people is happy, then....

   a. they should not have to see a psychiatrist
   b. they must have a high standard of living
   c. their lifestyle should be left alone
   d. they definitely are not communists

8. The main difference in the Indian's view of nature and the view of most people in modern day America is

   a. the Indians view nature as sacred
   b. modern day Americans view nature as sacred
   c. the Indians felt nature was superior to them whereas most of us feel superior to nature
   d. none of the above

9. Most Americans view nature as

   a. beautiful
   b. holy
   c. of secondary importance to technical advancement
   d. a good place to erect a National Park

10. Which one of the following is not an American value?

   a. patriotism for the country
   b. good education
   c. our President
   d. wealth

11. The greater a group's technology, then....

   a. the more control they have over their environment
   b. the less control they have over their environment
   c. the happier they are
   d. the more sad they are

12. A good example of a technological advancement that greatly affected the way we live is the

   a. air conditioner
   b. landing of a man on the moon
   c. electric can opener
   d. T.V.

13. One of the most important effects the automobile, as a technical advancement, has had on Americans is

   a. it enabled people to move out of the city to the suburbs
   b. it enabled more gas stations to open up
   c. it caused inflation
   d. it made horses obsolete

14. Which one of the following statements is most accurate?

    a. All Americans are happy because we have the world's highest standard of living
    b. Americans dislike nature
    c. Just because a country has a low standard of living it doesn't mean they are unhappy
    d. America is the world's best country

15. Bob Smith, a professor at Valley State College, says that man's behavior is completely determined by the physical environment. What is wrong with this theory?

    a. Actually it is man's perception of the physical environment that determines his behavior
    b. He over-estimates man's ability to adapt
    c. He fails to realize that all physical environments are not the same
    d. Nothing is wrong with the theory

16. Three people are interested in buying some land; they are a real estate developer, a farmer, and a bird watcher. They all select different pieces of land to buy. Why?

    a. They all make different amounts of money
    b. Each is looking for land for a different reason, so they choose different pieces of land
    c. They are all from different backgrounds so their needs are different
    d. B and C are both correct

17. The Cherokee Indians have been relocated. Their old environment was a forest; their new one is a prairie. They bring with them their old ideas and ways of living. How will they interact with this new environment?

    a. They will live just as they lived in the forest
    b. They will change completely
    c. They will adapt and find a medium ground between the old and the new
    d. None of the above

18. Two people are talking about the same area - Joey Brown - "This place is my home and so it should be left alone." Mr. Carter (a city planner) - "This place is a slum and should be torn down." Why do they perceive the same area differently?

    a. Their frame-of-reference is different
    b. They are different ages
    c. They dislike eachother
    d. Their lifestyles are different

19. A group of people have just moved into a new environment: What will determine how they react to it?

a. Their perception of that environment
b. What the geography of the land is like
c. Their frame-of-reference
d. A and C

20. Four people climb to the top of a mountain: a guru, a boy scout, a mining engineer, a photographer. What they each do on the mountain top is determined by what?

a. Their ability to climb
b. The mountain
c. Their lifestyle and values
d. B and C

21. Two groups of people have just moved into the same area. Group One are white settlers from Europe. In the new area they dig mines for ore, build large ranches, construct highways and large buildings. The other group is Indians, they hunt,fish, gather, do some limited farming and construct small villages. Why does each group respond differently to the new area?

a. Their previous lifestyle was different
b. Their perception of the geographical area was different
c. Their values are different
d. All of the above are correct

Circle the response that best describes your attitude towards each statement.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1. The natural environment determines man's lifestyle.	SA	A	N	D	SD
2. Effective planning and design must be grounded on intimate knowledge of how people perceive an environment (how it is and how it should be).	SA	A	N	D	SD
3. The reason people's lifestyles are different is because they perceive their relationship to the land differently.	SA	A	N	D	SD
4. All men pursue the same goals, so all men react the same.	SA	A	N	D	SD
5. Different physical environments create different lifestyles.	SA	A	N	D	SD
6. Man can change his environment.	SA	A	N	D	SD
7. Technology is the key to environmental change.	SA	A	N	D	SD
8. The desire to change is the key to environmental change.	SA	A	N	D	SD
9. A group's lifestyle cannot be changed.	SA	A	N	D	SD
10. If a group has a low standard of living, then their lifestyle should be changed.	SA	A	N	D	SD
11. Man's future has been pre-determined by man's past.	SA	A	N	D	SD
12. We have no control over the future.	SA	A	N	D	SD
13. There is a conflict between advancing technology and the natural environment.	SA	A	N	D	SD

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
14. Technological advancement should be considered most important as we look to the future.	SA	A	N	D	SD
15. The world would be a better place if all people perceived the world as Americans do.	SA	A	N	D	SD
16. Understanding how others perceive the world is not too important.	SA	A	N	D	SD
17. Finding harmony between man and nature is more important than technological advancement.	SA	A	N	D	SD
18. It is possible to have technological advancement without abusing our natural environment.	SA	A	N	D	SD
19. There is a direct relationship between a high standard of living and happiness.	SA	A	N	D	SD
20. Given the desire and the ability, man can mold his own future.	SA	A	N	D	SD

THE COWBOY AND THE SPACEMAN
TWO CONTRASTING WAYS OF LIVING IN THE AMERICAN EXPERIENCE

prepared by

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A NOTE TO TEACHERS

Before teaching this unit, you might want to prepare the following items which are needed but not included in this unit.

1. Ditto copies of the white pages in this unit for students.*

2. Obtain the 2 x 2 color slides and arrange in order.

3. Arrange to have a slide projector and a 16mm film projector.**

4. Prepare and mount pictures (from magazines) for Lesson A.

5. Obtain dictionaries - hopefully a class set.

6. Ask students to bring in old magazines for use in making collages.

*In this unit, the yellow pages are designed for the teacher. They present commentaries on the activities, objectives, and suggested evaluative strategies. The white pages are for the students and contain readings, case studies, and various activities needed to meet the objectives. Teachers will need to ditto copies of the white pages in sufficient quantities for their classes.

**Several 16mm films are footnoted in the lessons as optional media.

I RATIONALE

Stop and reflect upon our images of the American past. Colonists coming, felling trees, building cabins, opening mills, daming streams, laying out cities. The Atlantic seacoastal frontier--maritime in its North, planter in its South--was but a beginning. Open spaces called and the frontier moved westward as swarms of immigrants and prolific native loins populated the nation. Men had the motives to settle and exploit the land. The government called it "Manifest Destiny." The Indians called it a disgrace, but it wasn't their era. It was an era of men with forceful motives and technological power.

Across the land, as the nation developed, an economic system emerged which combined profit, politics, and "natural resources" which yielded an affluence unknown by any other society below, now, or since. The nation's people were proud of their production, standard of living, and lifestyle. They "lived well." They assumed further "progress." The emphasis was upon production and consumption and the marketplace--with few state controls--usually worked well, as the populace evaluated it.

These are the images of the American experience that emerge from the high school history text which we all studied and many of us--as teachers--continue to employ. However, how valid are these images for our students? American awareness is changing. The standards (values) for judging "progress," "standard of living," and "lifestyles" are shifting rapidly so that consensus is not clear--and maybe impossible. As more Americans came to be clustered in urban-industrial sinks with crowding, pollution, energy-crisis and alienation, the assumptions of progress seemed to vanish--along with agreement on its definition. Is bigger better? Is progress really our most important product? Can better living be attained through chemistry? The old commercial slogans were discredited--or, at least challenged--and the corporate giants dropped them, leaving them to chambers of commerce in remote corners of the nation or in regions not so remote.

This new awareness emerged with what ecological publicists call "our environmental crisis." Major efforts are underway to preserve what can be preserved, to conserve what can be conserved, and to save what can be saved. The major question involving "can" is the volitions of enough Americans to alter their lifestyles and aspirations to accomplish these goals--and to alter societal institutions to pursue similar ends. Much has been accomplished, but the tough issues are on the horizon, wherein own personal interests and material "standard of living" are challenged by environmental laws and behaviors.

Kenneth Boulding, an economist, has spelled out the nature of such conflicts using two colorful images: the cowboy (open system) and the spaceman (closed system). A portion of his writing is reprinted below and these images serve as the basis for this unit.*

*See Theodore Roszak, Where the Wasteland Ends (New York: Doubleday & Company, 1972), and Richard Hiess and Noel McInnis, editors, Can Man Care for the Earth? (Nashville: Abingdon Press, 1970).

*Reprinted from Kenneth E. Boulding, "The Economics of the Coming of Spaceship Earth," in Henry Jarrett, editor, Environmental Quality in a Growing Economy (Baltimore, Maryland: The John Hopkins University Press, Boulding calls the competitive, manipulative, exploitive mentality to question. Reminding us that "tomorrow is already here," his concept of the spaceship economy is a powerful one for students of American history. These students should have the opportunity to examine the implications of the open system (the cowboy with his market economy reflecting only market costs) with the closed system, wherein consumption is priced out at "real" costs. The environmental issues of the rest of the twentieth century would seem to turn on this point--and students will, as citizens, participate in making the decisions which will determine the quality of life we shall all enjoy. Thus, an American history course which presents the pioneer-cowboy images uncritically and without probing does a marked disservice to those student-citizens who already know something's wrong and who want to discern new paths for survival and a quality of life together as "riders together on a little speck in a vast, lifeless universe."

OBJECTIVES

A. Open Systems

1. Concept: An open system implies virtually unlimited natural resources available for human use.

2. General Objective: Students will state that (within the historical context of American history), men used (and misused) many natural resources because of their belief in the limitless nature of those resources.

3. Operational Necessities:

a) Definitions:

1. natural resources - industrial materials and capacities (as mineral deposits, waterpower) supplied by nature.

2. consumption - the utilization of economic goods in the satisfaction of wants or in the process of production resulting chiefly in their destruction, deterioration, or transformation.

3. progress - to move forward, to develop to a higher, better, or more advanced stage which has been given greater value.

4. open system - (See General Objective)

5. depletion - the act or process of lessening markedly in quantity, content, power or value.

6. wilderness - a tract or region uncultivated and uninhabited by human beings: a great number or quantity.

b) Student willingness to contribute to class discussion and activities.

c) Student willingness to share his own values as issues are raised.

4. Behavioral Objectives

a) Students will be able to express several generalizations after viewing a series of photographs illustrating natural resources.

b) Students will be able to define key terms (above) using the dictionary and employ these terms in subsequent discussion and other activities.

c) Students will be able to read the case studies on open systems and to compare them with one another in such a way as to paraphrase the following generalizations:

-the idea of profit motivated man's use of natural resources in open systems
-the idea of progress justified man's use of natural resources
-the belief in unlimited resources supported the idea of progress in search of profit

d) Students will be able to link the three generalizations above with contemporary issues through the use of one "ethics case": to be supported by class discussion and debate.

5. Evaluation

Alaska Pipeline Case

B. Closed Systems

1. Concept: A closed system implies there are only limited resources available for human use.

2. General Objective: Students will learn that there are only limited supplies of natural resources available on earth and the future of the earth depends on how man recycles and conserves these natural resources.

3. Operational Necessities:

a) Definitions:

1. conservation - planned management of a natural resource to prevent exploitation, destruction, or neglect.

2. recycle - to reuse material that would have been treated as waste.

3. preserve - to keep safe from injury, harm or destruction (protect).

4. reusable - (see recycle).

b) Student willingness to contribute to class discussion and activities.

c) Student willingness to identify personally with the subject and share his own values as issues are raised.

4. Behavioral Objectives

a) Students will be able to express several generalizations after viewing a model of photosynthesis on the earth (i.e., of closed systems in the past).

b) Students will be able to define key terms (above) using the dictionary and/or each other and employ these terms in subsequent discussion and other activities.

c) After viewing and listening to a sync.-slide presentation, students will be able to list items that they could do without to help save the earth (necessary vs. luxury items).

d) Students will be able to discriminate between different attitudes held by people in open and closed systems on the same subjects (i.e., consumption, wilderness, population growth, progress).

e) Students will link the generalizations with contemporary issues through class discussion.

1) The activities of all the natural resources of the earth are similar to photosynthesis.
2) Man may take deliberate actions to save the earth (recycling, conserving, preserving natural resources).
3) Man now uses many natural resources that are really not necessary for his existance (and maybe happiness) on earth.
4) Man's attitudes towards the earth's natural resources have changed, as more and more of them are being used up.
5) The activities typical of a closed system vs. those of an open system have and can be used to help save the earth.

5. Evaluation

a) Students will suggest possible actions to take concerning this issue.

b) Students will take some of these actions

A NOTE TO STUDENTS

> "What kind of a country do you want America to be?"
>
> Science can provide the answers which will enable America to move ahead at a greatly [faster pace]. But, if when we get there, we find only a shambles, it will then be too late to ask "What was the use of all that speed?"
>
> The time to wonder and worry about what the country will look like in 25 years from now is today. And the attempt to take a clear look grows increasingly difficult because of mounting pressure from competing [groups]. Our rivers, for example, belong to all the people. But agriculture, power, recreation, navigation, commercial fishermen--all these groups and more--must find ways of meeting their own needs in such a way as to preserve others' rights and the needs of all the people*

This unit you are about to study continually asks the BIG QUESTION--"What kind of country do you want America to be?" You are going to work out your own answers--and help classmates work out their answers. Thus, this unit depends heavily upon YOU, the student. You should be willing to contribute to class discussions, examine your own attitudes and opinions, and share them with other members of the class. Of course, you will not be graded upon your values and opinions. But you will be evaluated upon your contributions to the class's efforts, on your knowledge and reasoning abilities, and on your willingness to share with other members of the class.**

---

*Adapted from The Race for Inner Space, Department of the Interior, Washington, D.C., 1964.

**Your teacher may want to ask you to keep a notebook on class work and on the various materials used in class. Also, it is a good idea to keep an eye on the newspaper to see what the daily news has to do with what you are studying in class!

LESSON A: THE LAND: PROMISED AND WASTED?

Purpose: To teach the concepts: capital, human resources, and natural resources

To make comparisons and to draw conclusions from two readings discussing two historical eras.

Materials: From old magazines cut out about ten pictures of "America as the Promised Land" (showing unlimited amounts of land, trees, water, open space, etc.). Mount on cardboard or construction paper.

Readings: "Land" and "Wasteland"

Optional: cut out two pictures depicting 1) wide open spaces, 2) the inner city ghetto

Strategy:

1. Show pictures of "America as the Promised Land". (After you have discussed the "A Note to Students" handout). Ask students to describe what they see (i.e., lots of land, trees, open space, water, scenery, etc.).

2. Ask the class for a definition of natural resources (material and energy which man can use in the production of goods and services).

3. Write the term open on the chalkboard and ask the class what an open system implies about the amount of natural resources available in an area. Teachers might want to develop the concept system here, more extensively than the designer felt necessary to achieve the objectives for this unit.

4. Students should read "Land" handout.

5. In open discussion, ask students to evaluate and analyze: According to this handout, is land good or bad, desireable or undesireable? Why? What position does the reading offer on "America as the Promised Land"? Of land as a "natural resource"?

6. In the reading, what examples can you find of human resources? List on chalkboard, and then, ask students to define the concept.

7. In the reading, what are examples of capital resources (capital goods)? If students have difficulty, give them an example or two from their community (i.e., money in bank, machine tools, electric generating plant). Then, have students list examples on the board and define the concept.

8. Read the handout "Wasteland" in class. According to the reading, why is America called a "wasteland"? Do you agree? Why? Why not?

9. Ask students to compare the positions taken in the two handouts ("Land" and "Wasteland") and then, make comparisons with the pictures "America as the Promised Land." What conclusions--factual and evaluative --are they willing to draw?

10. Ask students to write a paragraph on the "America of Yesteryear" compared to the "America of Today." Ask them to use in the essays the terms natural resources, capital, open system, and human resources.

11. Several students should read their paragraphs to the class. Once several have been read, ask the students to reach a consensus on the most important point in the essays contrasting yesteryear and today.

    The teacher might then place this statement on the board: "In viewing our natural resources as unlimited and our land as an open-system, man has wasted the land and many resources to produce goods and services."

    Have the students compare this with their statements--and to criticize the teacher-written statement as to its accuracy, in their judgment.

LAND*

Land is many things to many persons-to the farmer, livelihood; to the townsman, space or a place to build his house; to the child, a playground; to the poet, a theme; to the patriot, a symbol.

To the economist, land is the soil under his feet, the materials in that soil, the slope that determines the ease of cultivation, the rain and sunlight that plants need.

To him, land also is the bays and inlets along the coasts; the fall of the streams, which permit the generation of electricity; the rivers on which are carried grain and industrial products to the seaports.

It is the deposits of iron ore in Minnesota, the coal in West Virginia, the oil in Texas.

It is the soil and climate that make timber in the Pacific Northwest, corn in Iowa and Illinois, wheat in the Great Plains, cotton in the South, citrus fruits in Florida, pastures in Wisconsin and New York.

Land, in the economic sense, is our entire natural environment--all the forces or the opportunities that exist independently of man's activity.

Land has much to do with our needs and the way we fulfill them.

Much of our activity we devote to getting the basic items of food, shelter, and clothing; other items--furniture, telephones, automobiles, highways, washing machines, bathtubs, refrigerators, picture windows, soap, newspapers--that make life more comfortable; and items that make life more stimulating--recreation, movies, and radio, concerts, education, books, libraries.

We want many things. It is likely that if we had all that we could list, new wants would arise tomorrow, and again we would be faced with the problem of how to satisfy them.

Four types of resources are available to each generation of Americans.

First, each generation has some legacy of capital goods from previous generations--tools, factories, railroads, canals, buildings, livestock, fences, wells, and so on. Some of them, such as canals and wells, are durable; they may serve for a century with little attention. Others require a lot of maintenance and early replacement.

Second, each generation has energy and the ability to do physical labor, to plant, shape, and mold.

Third, each has some ingenuity--to plan, measure, evaluate, and direct.

Fourth, all generations have the natural environment--the fertility of the soil, the iron ore in the mountains, the fall of the rivers, the water of the bays, the deposits of petroleum, and the variations in climate.

Our success in providing a good level of living, educating the young, preserving freedom and liberty, and leaving a good environment for our children depends fundamentally on how well we use the four factors of inherited capital, human energy, ingenuity, and natural resources.

---

*Walter E. Chryst and William C. Pendleton, Jr., "Land and the Growth of the Nation," Land: The 1958 YearBook of Agriculture (Washington, D.C.: Government Printing Office, 1958), pp. 2-3.

WASTELAND*

by Marya Mannes

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*Mannes, Marya, "Wasteland," from Man Alone, Eric and Mary Josephson, eds., The Dell Co., New York, 1962.

LESSON B: THE LAND AS "NATURAL RESOURCE"

Purpose: To teach definitions of the concepts progress, natural resource, capital, and open system.

Strategy:

1. Have the students work with a partner and come up with definitions for the above concepts. They should use a dictionary to check their definitions:

   1) progress - develop to a higher, better, or more advanced state
   2) natural resources - materials supplied by nature only (i.e., not man)
   3) capital - accumulated goods devoted to the production of other goods
   4) open systems - unlimited amounts of natural resources are available for human use

2. Ask students to circle which of the following are not natural resources and explain why they circled them:

   soil
   houses
   trees
   cars
   boats
   water
   animals
   schools
   air
   fish
   flowers
   cabins
   trash cans
   bicycles
   leaves
   litter
   clothes

3. Ask students to circle which of the following are examples of capital - and explain why.

   trees
   people
   factories
   water
   tools
   schools
   leaves
   hospitals
   boats
   trash cans
   tractors
   money
   cars
   houses
   television

4. Ask the student to describe progress by giving four examples and two non-examples of it. (For example, a student might label the space program as being an example of progress, and another might say it's an example of non-progress. The objective here is to determine the different "frames of reference" the students have towards progress. The student should be able to back up his choice of examples of progress or non-progress with logical reasons. The first student might say the space program shows that man advances to a higher state by doing things that have never been done before. The second student might argue that because of the space program, man is not advancing to a better state, but starving to death because the funds that could be used to buy food are used to go to the moon.

Is progress always good? Bad? Explain.

5. Ask students to list four examples of open systems and two non-examples and explain why they labeled them as such.

   Do we live in an open system? Why or why not?

LESSON C: THE DRIVE FOR PROFIT

Purpose: To teach the concept "profit"

To teach four generalizations:

1. Profit motivated man's use of natural resources
2. People who are willing to exploit the land for profit are often willing to exploit people for progress
3. The idea of progress justified man's use of natural resources for profit
4. The belief in unlimited resources (an open system) supported the idea of progress and the search for profit.

Strategy:

Day #1 Students will break up into groups of 4 or 5 people. They will be given Set #1 of the case study sets.

1) (New Comers See The Land, Whaling in Colonial Times, The Colonial Farmer, and the Colonial Plantation). Students will answer questions and discuss the cases together.

    1) What are some of the natural resources man used in these cases?
    A: land, timber, whales (maybe people)

    2) Why were they used?
    A: for profit

    3) What happened to the Blacks in "The Colonial Plantation? Why?
    A: They were slaves to and treated badly by the plantation owners - breeded, etc.
    Why: for profit

    4) What word do you think the people in these cases would have used to describe the changes that were taking place as a result of their actions (mentioned in the cases)
    A: progress

    5) Was the idea of progress good or bad to these early Americans? Why?
    A: Good

2) At the end of the period a group spokesman should share their discussion with the class.

Through guided discussion the students should come up with the first 3 generalizations and the teacher should write them on the board.

Day #2

1) Review yesterday's work

2) Students will break up into groups again and read Set #2 of the case studies (The Fur Traders, The California Gold Rush, and The Logging Camps). Students will answer questions and discuss these cases together.

Questions:

1) Why would the early Americans in these case studies view America as an open system? Give examples.
   A: All the beavers, trees, gold and minerals, land was ahead of them in seemingly unlimited amounts.

2) What motivated them to use some of the natural resources in America?
   A: Profit

3) How did the idea of progress, as the early Americans thought of it, affect their search for profit?
   A: It made it seem the good thing to do

4) How did the early Americans' view of natural resources affect their views on progress?
   A: Supported it.

5) Have these views changed at all? If so, how?
   A: Yes - man no longer sees his natural resources as being unlimited, so progress (involving the use of natural resources) is not always viewed as a good thing.

3) Again the students should share their findings with the class and the teacher should write the last generalization on the board.

4) The class as a whole should read the case "Hunting" and discuss the questions orally.

5) Ask the students to skim their history texts for other examples of open systems in history (for homework).

*Footnote: Teachers may want to do follow up activities on how man has exploited the natural resources. One such activity could involve showing the film "River" (1939). This film traces life in the Valley of the Mississippi River during the last 150 years. The early days of the cotton culture; the lumbering operations in the North, and agriculture in the valley are all discussed along with their consequences to the land. The film concludes with a discussion of various methods of regional planning to rectify the problem. Available from the Media Center, Florida State University, Tallahassee, Florida 32306.

Handout: Case Study Set #1*

NEW COMERS SEE THE LAND*

WHALING IN COLONIAL TIMES*

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*Reprinted from Oscar Handlin, The Americans (Boston: Little, Brown and Company, 1963), pp. 32-33, 153, 93, 95-96.

THE COLONIAL FARMER*

THE COLONIAL PLANTATION*

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*op cit.

Handout: Case Study Set #2

THE FUR TRADERS

THE CALIFORNIA GOLD RUSH

THE LOGGING CAMPS

HUNTING

As Archie Carr points out, hunting has been a necessity for most of the history of mankind, up until very recently. Yet he raises some questions in this reading which demand that we reassess our views about the hunt. Perhaps some of you will object to the point of view of this writer, feeling that your own hunting habits are healthy and basically good. Try to imagine a world which excludes killing for sport or "fun."* What would it be like? Then consider these further questions:

1. What is the point of the story about Theodore Roosevelt and the woman he meets?

2. What is the impact upon the ecological system of hunting for sport?

3. Why does Carr tell the story of the African hunters? What adjustments will the boy have to make in his attitudes and lifestyle when nations begin to prohibit hunting?

4. What is Archie Carr's ultimate concern? What is the ultimate concern of the hunters?

---

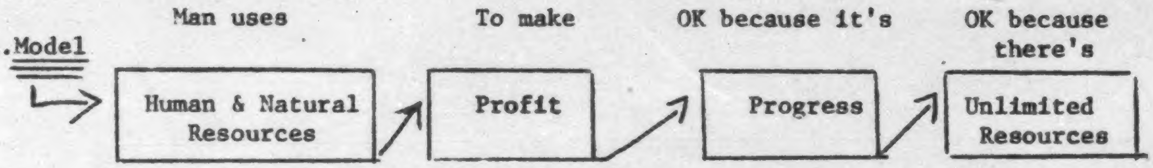
* Reprinted from Archie Carr, Ulendo (New York: Alfred A. Knopf, Inc., 1964), pp. 98-99.

LESSON D: REAL COSTS AND MARKET COSTS

Purpose: To put the previous four generalizations into a model and use it to analyze a contemporary case study.

Materials:

1. Model



2. Case Study - The Land Developers

Strategy:

1. Students will be asked to look at four previous generalizations and make a model of them to make them more concise. Teacher may use guided discussion and write the above model on the board, i.e.,

   T: Man uses ________ to make a profit?

   A: Human and natural resources

   T: Man justifies these actions by calling it ________?

   A: Progress

   T: Why does man feel this is enough of a justification?

   A: Unlimited resources

2. Students will read a case study in class and roleplay various hypothetical characters.

3. Students will analyze the case according to the model.

4. Ask students to think about computing the REAL COSTS

For instance, what is the cost of air polluted to make steel? How is this reflected in the cost of products made of steel? How should steel companies be charged for waste disposal via smoke stacks? Why pays these costs?

Also consider the costs involved for

Wastes in streams
Water consumed in the Mid-West for electric power
Bus fumes in the air
Noise from trucks

Who should pay??

Case Study: The Developers are Coming*

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*Abridged from J. Anthony Lucas, "The Developers Are Coming," The Saturday Review, October 21, 1972, pp. 58,59,60.

5. Students should play the following roles:

1) Representative of a building company that wants to put up several condominiums on Nantucket Island

2) A year round dweller of Nantucket

3) A member of the local historic society

4) A movie star who has a home on Nantucket Island

5) An outside construction company that has many plans for the available land on Nantucket Island

Pretend you are speaking at a special meeting. The people present at the meeting will be voting on Senator Kennedy's bill. Determine how you feel about the bill and try to persuade how they will vote.

Note:

Teachers may wish to show a short film entitled Boomsville (11 minutes, color, sound, 16mm, 1970. Learning Corporation of America. Available on a rental basis from The Media Center, Florida State University, Tallahassee 32306). It is a short animated film depicting the development of a city, from its earliest beginnings to the present and beyond. In the growth of the city one can see a change in attitudes toward the natural environment. The film takes a definite point of view about progress and urban growth, which should provide the basis for good class discussion.

1. What major steps did the city progress through its development? Was this progress planned or unplanned? How do we evaluate progress? Is it good, desirable? How have Americans traditionally measured their progress? What is the purpose of progress? How does it help us to live better, happier, fuller lives?

2. What did people have to give up in the film in order to permit growth in the city? Is destruction of the old part of growth? How do you feel about that? Do men have to consume in order to exist? In order to grow? Notice that the growth in this film was not accompanied by pain. Growth occurred, but in the absence of pain. Destruction occurred, but each time the city grew. Is this realistic? Must some suffering accompany growth?

LESSON E: CASE STUDIES

Purpose: To evaluate students learning by seeing how they apply the model to some contemporary cases and also how they compare yesterday's America to today.

Strategy:

1. Pass out case studies of Alaskan pipeline case.
2. Ask students to read silently and write answers to questions (to be passed in to instructor).
3. Class discussion with contributions from students on their decisions and backing for decisions.

Materials:

1. Alaskan Pipeline case
2. Set of questions

Also, use the following case studies with the same set of questions - and discuss them in class:

1) Wild Horses Slaughtered
2) The Dead Waters in New York Harbor
3) A Battle over Rich Land

THE ALASKA PIPELINE CASE*

---

*Abridged from Environmental Action, April 15, 1972, pp. 5-6.

Questions:

1) What are the examples in this case of man using or trying to use human or natural resources?

   A: Depends on which case the student has read.

2) Why does man want to use these resources?

   A: Profit

3) How does man justify using these resources?

   A: By calling it progress

4) Is this a valid reason? Why or why not?

   A: Should be no - depends on student's definition of progress.

5) Do you think that "man" in this case study sees the resources as belonging to an "open system?" Why or Why not?

   A: Value statements

6) How does this compare with the actions of man in early America?

   A: Man in early America definitely saw resources as unlimited - not true today.

7) Do you think the resources are unlimited in this case? What kinds of actions would you take if you were "man" in this situation?

   A: Value statements

"WILD HORSES SLAUGHTERED"*

"THE DEAD WATERS IN NEW YORK HARBOR"

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*Reprinted from The Tallahassee Democrat, March 5, 1973

**Reprinted from Mike Jahn, "Voyage to a Dead Sea," The Saturday Review, October 28, 1972, pp. 14-15.

" A BATTLE OVER RICH LAND"*

*Reprinted from Newsweek, October 9, 1972, pp. 80-82. Abridged version.

LESSON F: SOME TERMS

Purpose: To teach definitions of: preserve, conserve, recycle, and reuse.

Materials: Teacher's definitions of above terms and student work sheet.

Strategy:

1) Write the words preserve, conserve, recycle and reuse on the board; ask students for definitions and discuss these.

2) Give the following definitions to the students (on the board) and ask them to write them down.

3) Hand out the student activity sheets and ask pupils to do Part I in class.

4) Discuss the answers and ask students to give reasons for their choices, or if the answer was wrong - why? (in terms of definitions).

5) Ask the students to do Part II of the student work sheet to be handed in.

Definitions of Terms

preserve - to protect our natural environment and resources from being used; to leave nature alone.

conserve - carefully planned use of our natural resources to avoid waste.

recycle - to process used products and wastes so they can be used again.

reuse - to use products and natural resources and capital goods as many times as we can, to get as much use out of something as possible.

LESSON F, Part I TEACHERS ANSWER KEY

1. REU
2. CON
3. REC
4. PRE
5. REC
6. CON
7. PRE
8. REC
9. CON
10. REU

LESSON F

STUDENT ACTIVITY SHEET

NAME__________________________

PART I.

Label the following items as examples of either preserving (PRE), conserving (CON), recycling (REC) or reusing (REU).

1.__________ making a pencil holder out of a coffee can.

2.__________ setting up a committee to make plans for using a newly discovered coal deposit.

3.__________ collecting aluminium cans for the local drive.

4.__________ fencing off 100 acres of forest - and letting no one in.

5.__________ crushing coke bottles to be used for industrial purposes.

6.__________ people may boat and fish in the local lake - but not swim.

7.__________ lobbying against any proposed plans for the arid section of your state.

8.__________ collecting old newspapers to be sold to a paper factory.

9.__________ hunting and fishing seasons.

10. painting an old watering can - and using it in your decor!!

PART II.

Give your OWN EXAMPLES (at least 3) of each of the following:

A. Preserving
1.
2.
3.

B. Conserving
1.
2.
3.

C. Recycling
1.
2.
3.

D. Reusing
1.
2.
3.

LESSON G: FROM OPEN TO CLOSED SYSTEMS

Purpose: To teach the concept CLOSED SYSTEM:

a) A closed system implies there are only limited resources available for human use.

b) In the closed system the earth, the balance of nature can easily be upset.

Materials: model - The Earth ... A CLOSED SYSTEM
model - Our Planet's Life Cycle
Four Case Studies

Strategy:

1) Show the model The Earth---A Closed System and ask one of the students to explain it.

A: Living things can only exist in a thin strip called the biosphere - if we ruin it we have no place to go.

2) What does this imply about man's use of natural resources? Air, water, minerals, soils, etc.?

A: Man should use them carefully, man should limit his use of natural resources.

3) Write concept (a) on the board (Students should write it down)

4) Ask students to make a list of six other examples of closed systems. Ask for examples from a few students and have them explain why they are examples of closed systems.

A: Examples:
1. spaceship
2. houseboat
3. Amish community
4. Eskimo's home
5. animals in the forest
6. atomic submarine

5) Show model Our Planet's Life Cycle

6) Ask students to explain the "cycle".

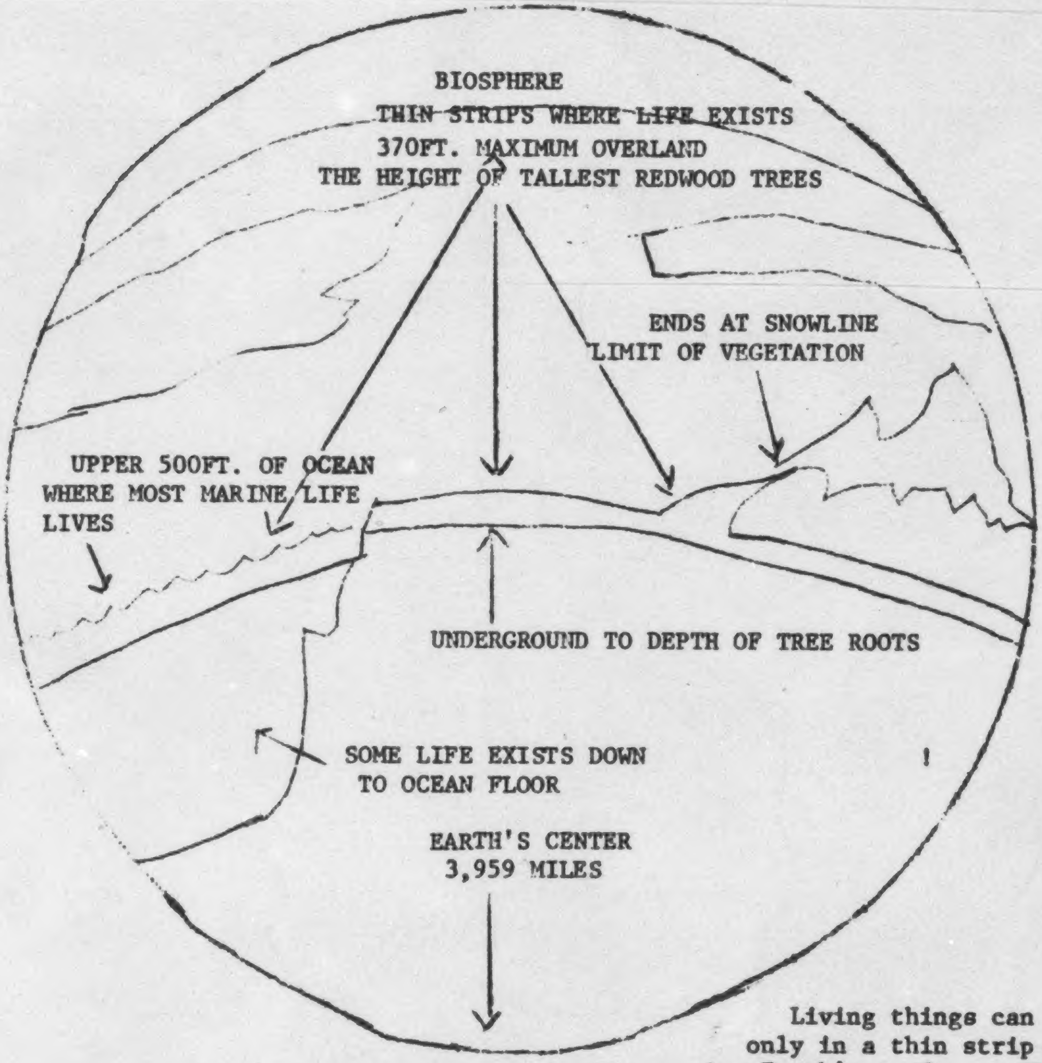
7) Explain how - if one step is taken out or "upset" - the balance would be upset.

8) Write concept (b) on the board (students should write it down)

9) Hand out the sheet with four examples of upsetting the balance of nature.
Questions: 1) What is the cause of the "upset"? Why? (For each case).

2) What are some examples of how man upsets the balance of nature?

3) Are these "upsets" always bad? If not, give examples of good upsets.

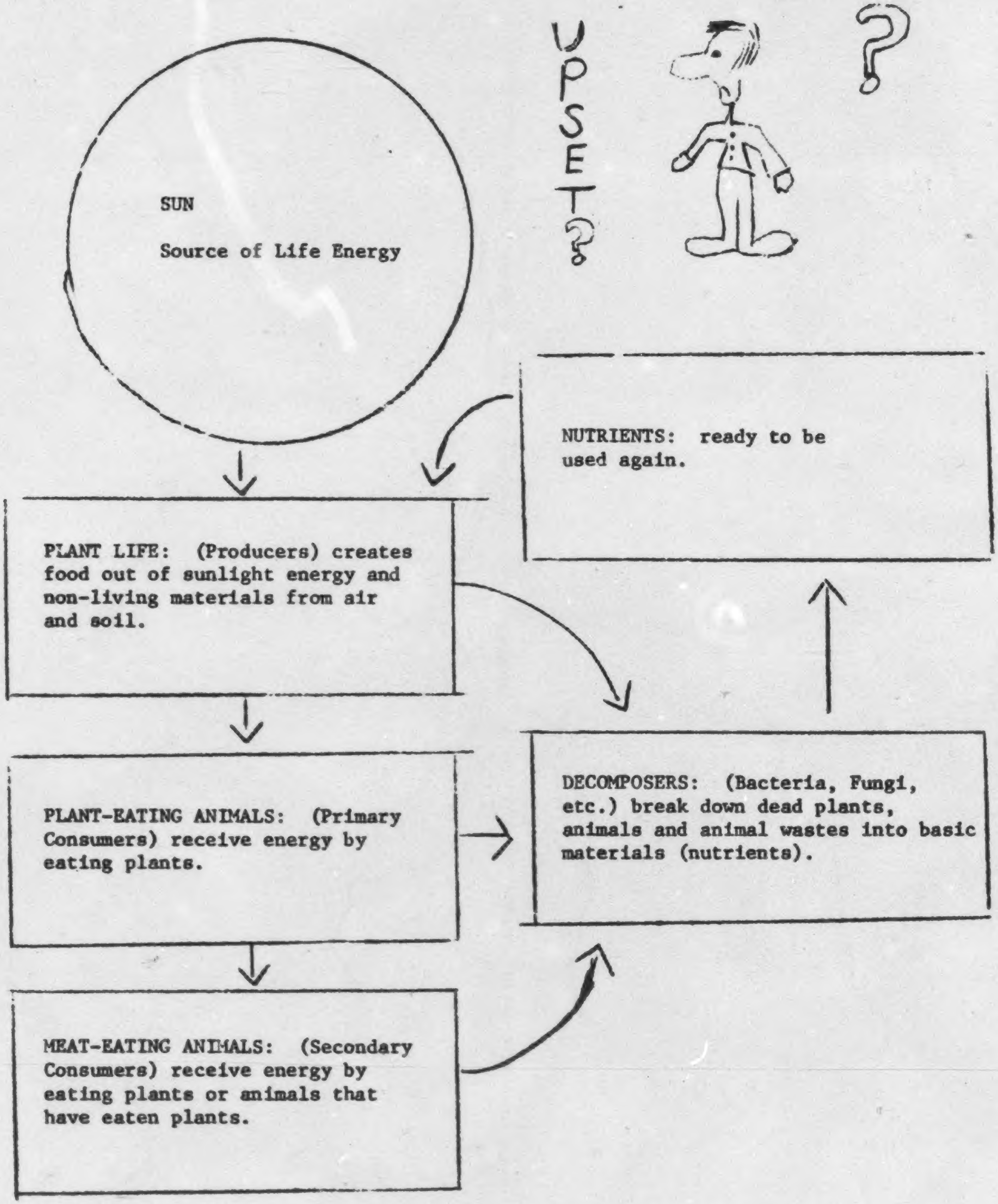

BIOSPHERE
THIN STRIPS WHERE LIFE EXISTS
370FT. MAXIMUM OVERLAND
THE HEIGHT OF TALLEST REDWOOD TREES
ENDS AT SNOWLINE
LIMIT OF VEGETATION
UPPER 500FT. OF OCEAN
WHERE MOST MARINE LIFE
LIVES
UNDERGROUND TO DEPTH OF TREE ROOTS
SOME LIFE EXISTS DOWN
TO OCEAN FLOOR
EARTH'S CENTER
3,959 MILES

Living things can exist only in a thin strip covering Earth's surface. This area is called the biosphere. It is the only known place in the universe where life can exist. If we ruin it, we have no place to go.

THE EARTH ... A CLOSED SYSTEM

Adapted from Cincinnati Bell Bulletin, 1970

OUR PLANET'S LIFE CYCLE



SUN

Source of Life Energy

NUTRIENTS: ready to be used again.

PLANT LIFE: (Producers) creates food out of sunlight energy and non-living materials from air and soil.

DECOMPOSERS: (Bacteria, Fungi, etc.) break down dead plants, animals and animal wastes into basic materials (nutrients).

PLANT-EATING ANIMALS: (Primary Consumers) receive energy by eating plants.

MEAT-EATING ANIMALS: (Secondary Consumers) receive energy by eating plants or animals that have eaten plants.

"SOME EXAMPLES OF UPSETTING THE BALANCE OF NATURE."*

Example #1

Example #2

Example #3

Example #4

In Florida, the industrial sources of air pollution include the mining and manufacturing centers of the phosphate industry. Fluorides, produced in Florida primarily by the phosphate industry, are harmful to vegetation - including citrus and gladiolus - and can cause damage to livestock either through direct contact or, usually, through ingestion of plant material which has been contaminated. Persons living near a source of fluoride pollution can suffer from eye irritation, respiratory inflammation and breathing difficulty.

*Cases #1 through #3 are reprinted from Junior Scholastic Magazine, 1970 Volume.

LESSON H; ON THE SPACESHIP

Purpose: To teach the generalizations:

1) The activities of man are conducted in a closed system.

2) Man may take deliberate actions to determine the future of the earth (i.e., preserving, conserving, recycling, and reusing natural resources).

Materials: Student Activity Sheets - "What You Can Do"

1) Have a student read the paragraph aloud and discuss questions as they are read.

2) Give the students about 20 minutes to form groups and to work on Activity #A, and then discuss their answers for about five minutes.

3) Do Activity #B as a whole class. Encourage students to express their values and suggestions.

STUDENT ACTIVITY SHEET

"WHAT YOU CAN DO"

Imagine you are journeying through the universe on a spaceship - and you suddenly find out no one is running it properly. How would you feel? Where could you go? Now, think of our earth as being a spaceship. The nearest star is millions of miles away and the next, a few light years away! The earth makes its lonely journey across the universe with a few billion human passengers. If you found out it wasn't being run properly, how would you feel? Where could you go? How could it be run properly? What would you do?

Activity A: Form groups of four or five students and together make plans for a journey to the moon for a month. You can put anything you want to on your large efficient spaceship - plan on having about 250 passengers.

1. What materials or natural resources would you take along?

2. How would you use them?

3) How would jobs, food, material goods and free time be divided up among the passengers?

Activity B: Now make plans for your journey on the Spaceship Earth!!

1. What materials or natural resources are available?

2. How are they used?

3. How are jobs, food, material goods and free time divided up among its passengers?

4. How is the spaceship earth run compared to the spaceship in Activity A?

5. Is this good or bad? Why?

6. What can you do?

LESSON I: TWENTIETH CENTURY MAN

Purpose: To teach generalization "Man now uses many natural resources that are really not necessary for his existance (or even) happiness on earth."

Materials: 1) tape or record of the song "20th Century Man" by The Kinks on their Album, Muswell Hillbillies.

2) slides

3) sheets with the words to the song

4) magazines, scissors, glue, string (to make projects).

Strategy:

1) Show slides of many examples of twentieth century living (especially luxury items) and play the song "20th Century Man" by The Kinks,on the album Muswell Hillbillies (RCA Victor, Copyright Davray Music,Ltd., 1971).

2) Ask students:

a) What are some examples of things we could live without (seen on the slides)

b) What are some examples of natural resources that these things were made from?

c) Group the above items into categories under:
NECESSARY COMFORTABLE LUXURY
Discuss why.

d) What does this say about the natural resources that man uses?

A: Students should give above generalization.

3) Pass out sheets with the words to the song and let students hear the song again as they read the words.

4) Ask students:

a) How does the man in this song feel about the twentieth century? Why?
A: He doesn't want to be here. Too much confusion, insanity.

b) What solution (if any) does he see?
A: He's like to go back in time - or just leave.

c) Do you agree with his solution?
A: Value statement

d) How do you feel about the twentieth century?
A: Value statement

e) What solutions or actions do you suggest? Where do we go from here?
A: Value statements

5) Groups of 3 or 4 students may work on a project. They may make collages, mobiles, or junk art. The title of the project could be "Twentieth Century Man" or "The Twentieth Century."

6) Display the project in class or throughout the school.

20th Century Man

(From the Kinks - Muswell Hillbillies Album, RCA Victor, 1972. Words and Music Copyright 1971, Davray Music Ltd.)

NOTE: Record continues, repeating some of the verses. For the sync-slide presentation, stop here.

LESSON J: CONSUMING

Purpose: 1. To teach the definition of consumption.

2. To teach the concept: When buying goods we are not paying the real cost of the items we buy.

Materials:
1) definition of consumption
2) a can of peas
3) Student Activity Sheet
4) Student Valuing Sheet

Strategy:

1) Ask for a definition of consumption and write it on the blackboard (If necessary reword - i.e., consumption - to use economic goods for the satisfaction of human wants (or in the production of goods) resulting in their destruction, deterioration or transformation.

2) Ask a student to read aloud the paragraph on the Student Activity Sheet and consider the questions asked.

3) Ask a student to open a can of peas in front of the class. Let them notice what they will actually use, what they paid for the item, and what the real cost may be.

4) Ask students to do the activity sheet in class and discuss the answers. Ask for added items when they are done.

STUDENT ACTIVITY SHEET
LESSON J PART I

It seems as if everyone is always complaining about the cost of living these days. However, the prices we pay for the items we buy and use are seldom the real costs of these goods. For example, consider a can of peas which would probably cost 25¢ at the grocery store. The peas will probably be eaten, but what happens to the tin can? - and the paper label on the can?? They cost us the price of diminishing natural resources (tin, trees) → and will probably cost us the price of polluting our environment. How much do you think this would amount to in dollars and cents, or in other ways? Consider the following items and write down some of the things that should be included in the real costs (that not paid for in dollars and cents). Also, add to the list of items!

Item	Estimate of Price	REAL COSTS
1) A can of peas	25¢	the tin used to make the can, paper used for the lable, will probably pollute the environment.
2) Electricity		
3) Noise Pollution		
4) Wrapped food items		
5) Cars		
6) Fashion items		
etc. (ADD SOME!)		

STUDENT VALUING SHEET
LESSON J PART II

If we are only paying for the items we use with dollars and cents - who is paying the real costs of them and how are they being paid for ?? The answer is obvious, we are paying the real costs ourselves and at a high price. We are paying by sacrificing "America the Beautiful" and perhaps the very future of our children - to consume goods in large amounts and at fast rates. In a spaceship system such as earth such activity may have very serious results.

Consider the following questions:

1) What was man's attitude towards consumption in the "cowboy system" of frontier America?

2) What is man's attitude towards consumption in the spaceship system today?

3) Why, if at all, has this changed?

4) What is being done for the future of the earth?

5) What can you do?

LESSON K: REVIEW

Purpose: To review unit and make plans for further activities.

Strategy:

1) Ask students if they have any questions about the unit. If not, review by asking questions, i.e., Start with lesson A and ask questions about or discuss all or some of the following contained in the unit:

   a) definitions (including open and closed systems)
   b) model of generalizations (lesson D)
   c) the case studies
   d) Our Planet's Life Cycle
   e) examples of all definitions and concepts

2) Ask students how they view the plight of the spaceship earth (good or bad) and ask them to suggest what they can do a) personally, and b) as a group.

3) Make plans for one of their group suggestions to be carried out in the near future.
   i.e.,: a) radio broadcasts asking people to conserve and recycle
   b) plan a fair where the only items sold are those made from reused or recycled materials.
   c) collecting "deposit" bottles and using the money for an environmental cause.
   d) etc.

TEST

1. Which of the following are not natural resources? (Circle)

a.	apples	f.	cars
b.	clothing	g.	bikes
c.	houses	h.	returnable bottles
d.	water	i.	dogs
e.	trees	j.	schools

2. Which of the following are examples of capital goods? (Circle)

a. tools
b. lakes
c. factories
d. buildings
e. livestock

3. Write the definition of open systems: ______________________________
____
____

4. Do we live in an open system? Why or why not? ______________________
____
____
____

5. Give three examples of progress and explain why you chose these: _______
____
____
____
____

6. Compare and/or contrast the idea of progress as viewed by the frontier American and the American today - give reasons for your statements:
____
____
____
____
____
____

7. Give two examples of each of the following:

a. preserving ____________
____

b. conserving ____________
____

c. recycling ____________
____

d. reusing ____________
____

8. Write down the definitions of a closed system: ____________________
____
____
____

9. List four examples of closed systems: ____________________
____
____
____

10. Which of the following is not one of the steps in Our Planet's Life Cycle?

    a. producers
    b. nutrients
    c. buyers
    d. consumers

11. Why is the earth sometimes compared to a spaceship? Explain in a paragraph.
____
____
____
____
____
____
____
____

12. a. Explain the following statement "The prices we pay for items we buy and use are seldom the Real Costs of these goods."

    b. Give examples of three items and write down their cost in dollars and cents (estimate) and then give their real costs.

TEST ANSWERS

1. b. clothing
   c. houses
   f. cars
   g. bikes
   h. returnable bottles
   j. schools

2. None

3. open systems - unlimited amounts of natural resources are available for human use.

4. Value statement - make sure backing statements are congruent with answer.

5. Students choice - make sure explanations are congruent.

6. Briefly - the frontier American viewed progress as being good since he saw America as being an open system. Today, progress is not always seen as good. For example, it may use up too many natural resources in our closed system - Spaceship Earth.

7. Students choice - should be congruent with definitions.

8. closed system - implies there are only limited resources available for human use.

9. Students choice - should agree with definition.

10. c. buyers

11. Briefly - It is a closed system.

12. a. Briefly - often we pay a much higher price in terms of sacrificing our environment.

    b. Students choice.